



CRC Press
Taylor & Francis Group

CRC Rights Guide

AUTUMN/WINTER 2025

In focus this season

Many of our titles included this season are structured as handbooks, guides, and practical resources for professionals and academics focusing on cutting-edge technologies in chemical engineering, computer science, biology, life sciences, human factors and ergonomics, mathematics, and medicine.

Our publications consistently provide readers not only with the theory behind the science but also with practical knowledge and applications to advance their expertise in emerging technologies across all our STEM disciplines. This broad range of offerings includes contributions from the most experienced and well-known global authorities, providing the level of confidence our readers expect when selecting our content.

Our Commissioning Editors take immense pride in working with distinguished scholars and skilled authors from diverse fields around the globe. We have spotlighted a few of these pioneering authorities in the Q&A section.

Nigel Holmes, author of *Let's Get Infografit: A Graphic Look at Exercise and Health*, is a world-renowned graphic designer and the former Graphics Director of *Time* magazine, as well as a best-selling author of several books, including a few co-authored with Lonely Planet. William Hohl, Christopher Hinds, and Kevin Welton are preeminent figures and widely regarded as luminaries in their field, a reputation clearly reflected in the long-awaited third edition of *ARM Assembly Language*.

We are a powerhouse in STEM. Our content is recognized globally for its credibility and impact among students, researchers, and professionals. Our rigorous peer review process sets the standard for quality and scholarly excellence, shaping the future and fostering human progress through knowledge.

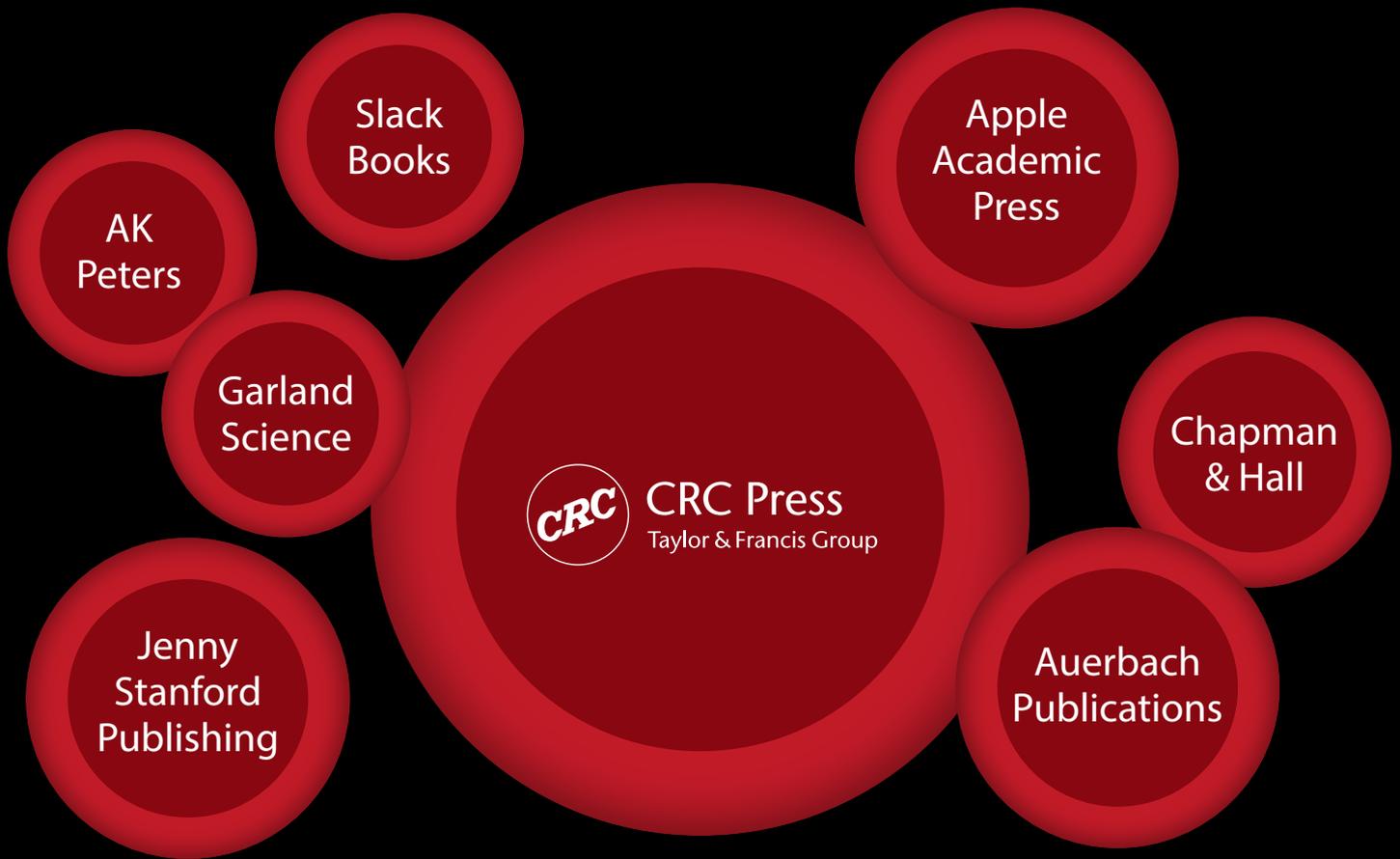


Nora Konopka



Sunil Nair

Editorial Directors for STEM



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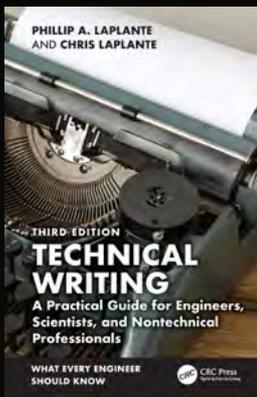
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What Every Engineer Should Know

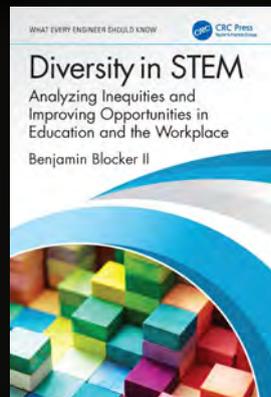
What every engineer should know amounts to a bewildering array of knowledge, as engineering intersects with all fields of modern enterprise. This series of concise, easy-to-understand volumes provides engineers with a compact set of primers on practical subjects such as patents, contracts, software, business communication, management science, and risk analysis, as well as more specific topics like embedded systems design. The books in this series address important problems encountered in the line of daily practice—problems concerning new technology, business, law, and related technical fields.



Technical Writing

Phillip A. Laplante and Chris Laplante

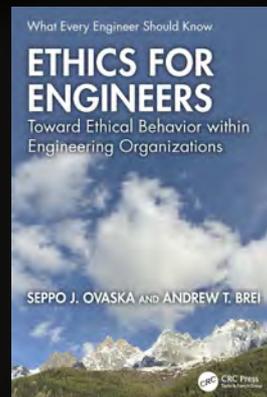
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ISBN 9781032843742



Diversity in STEM

Benjamin Blocker II

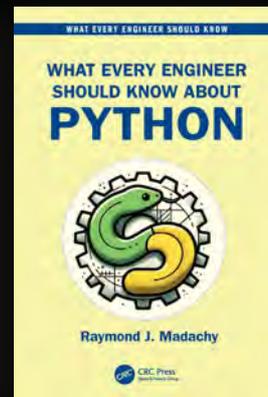
September 4, 2025 • 160 Pages, 2 B/W Illustrations
ISBN 9781032592152



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Seppo J. Ovaska and Andrew T. Brei

August 21, 2025 • 252 Pages, 16 B/W Illustrations
ISBN 9781032779423



What Every Engineer Should Know About Python

Raymond J. Madachy

May 27, 2025 • 318 Pages, 50 Color & 25 B/W Illustrations
ISBN 9781032358185



What Every Engineer Should Know About Digital Accessibility

Sarah Horton and David Sloan

April 30, 2024 • 268 Pages, 11 B/W Illustrations
ISBN 9781032263861

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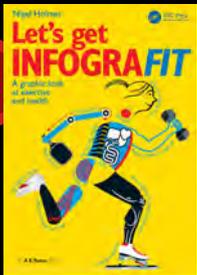
IN CONVERSATION WITH

Nigel Holmes

the author of *Let's Get Infografit*, explains how design can inspire daily movement.

Nigel Holmes

has written ten books (now eleven!) on information design and infographics. He is the former graphics director at Time magazine, has lectured globally, and has taught at Stanford and Yale. His diverse list of clients includes the BBC, Ford, Heinz, BMW, Sony, Estée Lauder, and Apple, and his work has appeared in a wide range of media including *The New York Times*, *Rolling Stone*, *Esquire*, *Sports Illustrated*, *New Scientist*, *National Geographic*, *Scientific American*, and *The New Yorker*. He has given three TED talks, his work has been exhibited internationally, and he is the recipient of multiple awards, including the Lifetime Achievement Award from The Society of News Design, and the Ladislav Sutner Award.



Let's Get Infografit

A Graphic Look at Exercise and Health

Nigel Holmes

October 2025

ISBN 9781032777276

160 Pages, 186 Color Illustrations

Subject: Graphic Design

www.routledge.com/9781032777276

At 83, why did you decide to write a book about exercise?

Designers are generally a rather sedentary lot, sitting at our computers for hours at a time. We get rusty. In my previous book, *Joyful Infographics*, the introductory chapter was a slightly tongue-in-cheek reference to this, titled “Warming Up.” It was a gentle prod for us to get up and stretch a bit, showing some simple exercises, and I received many comments about that part of the book. So I wondered if an entire book about exercise graphics might work out (pun sort of intended).

Over the years, I had created a lot of diagrams for magazines such as *Sports Illustrated*, *GQ*, and others, so I had a backlog of graphic explanations of stretching, running, cycling, and swimming. That formed a solid foundation for the main chapter of a book about getting (or staying) fit—at any age.

The book includes a section on nutrition. Do you have a background in that field?

No! But what you eat—and how much of it—is an important part of the “fit” in the title. So, I interviewed the noted nutritionist Marion Nestle, Professor Emerita of Public Health at New York University. She kindly reviewed what I wrote about nutrition and food in general.

I’m also not qualified to discuss the physical and anatomical aspects of exercise or the risk of injuries. To address that, I spoke with an emergency room doctor and a trainer from my local gym. They provided lots of valuable input, and their comments are included throughout the text where needed.

What other topics does the book cover?

One complete chapter is based on an at-home exercise program developed a few years ago by the consulting doctor, Phillip Kasofsky. Other chapters explore the history of exercise graphics—from runners painted on Greek vases to Victorian exercise manuals (where everyone is hilariously overdressed), all the way up to modern-day examples.

There's a section on anatomy and muscles, a lighthearted look at what some of my fellow designers do for exercise (if anything!), and illustrations by the designers themselves. I also cover what can go wrong if you overdo it, and explore what the future might hold, including AI and theories of longevity.

The book ends with a collection of quirky topics: unusual bicycles, how to exercise your tongue, and a list of long-lived comedians—because a sense of humor always helps.

The title *Let's Get Infografit* might make it sound like a book just for designers—or maybe just lazy designers! Who is it really for?

Well, plenty of people—not just designers—sit at desks all day. Some hate the very idea of exercise or feel self-conscious about being seen at the gym. This book offers different ways to approach staying fit, and it hopes to make the process more inviting and enjoyable. (If a book can hope, that is.)

It's not an exercise manual—though there are plenty of ways to move included. The tone is casual and non-academic, encouraging rather than instructing. You don't need to hit 10,000 steps a day (and yes, I explain where that number came from—hint: it's not scientific).

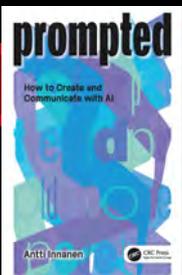
Most people agree: you feel better when you move your body. This book is a good, friendly place to start.





Antti Innanen

is the CEO of Dot, a legal design consultancy, and LEGIT, an AI consultancy. He specializes in making complex systems more human-centered and is at the forefront of applying AI in professional services. He frequently writes about AI, legal design, and the future of work.



PROMPTED

How to Create and Communicate with AI
Antti Innanen

December 2025

ISBN 9781041066613

224 Pages, 3 B/W Illustrations

Subject: Artificial Intelligence

www.routledge.com/9781041066613

IN CONVERSATION WITH

Antti Innanen

the author of *PROMPTED: How to Create and Communicate with AI*, on the future of human-AI collaboration.

What inspired you to write *PROMPTED*, and why was now the right time?

We're living through the most significant transformation in human-technology interaction since the invention of the computer. Tools like ChatGPT and Claude have moved from research labs into daily workflows—yet most people are still using them like sophisticated search engines.

I wrote *PROMPTED* because I saw the need for a fundamentally different approach: not just better prompts, but better thinking.

The book grew out of observing thousands of people in workshops struggle with AI—then suddenly break through to something remarkable. The turning point wasn't technical knowledge. It was mindset. Those who succeeded treated AI as a thinking partner, not a vending machine. They embraced iteration, developed taste, and learned to think with the machine rather than just instructing it.

How does your approach to AI differ from other books on the subject?

Most AI books focus on techniques and hacks—tricks that quickly become obsolete as the technology evolves. *PROMPTED* takes a different approach. It's not about pushing the right buttons; it's about developing the mindset to think alongside intelligent systems.

The book revolves around four enduring meta-skills:

- Understanding the nature of AI
- Building mental models for collaboration
- Embracing iterative workflows
- Cultivating taste in an era of abundant content.

These aren't just AI skills—they're thinking skills. Whether you're a lawyer, designer, or strategist, learning to collaborate with AI fundamentally reshapes how you approach problems.

What exactly is “vibe coding,” and why is it important?

“Vibe coding” is a phrase coined by OpenAI co-founder Andrej Karpathy. It describes a new style of programming where you convey intention and tone rather than precise instructions. Instead of rigid syntax, you tell the AI what something should feel like—and it interprets your intent to produce what you need.

This shift extends well beyond coding. In law, someone might prompt an AI with: “Draft something like the previous settlement, but tougher on IP and with a friendlier tone.” In medicine, a doctor might say, “This reminds me of a case from last month.”

This isn’t about being vague. It’s about leveraging AI’s remarkable capacity to understand nuance, context, and emotion. When you learn to “speak in vibes,” you open creative pathways that conventional instructions can’t reach.

What role does philosophy play in how you think about AI?

Philosophy offers the cognitive frameworks that make AI collaboration more thoughtful and intentional. Many of the ideas in *PROMPTED* are grounded in philosophical thinking—probably because I’m a philosophy dropout. I left university before completing my degree and took a different path into law, but those early philosophical questions and habits of thought stayed with me.

The book also explores how AI serves as a kind of mirror—reflecting not just our questions, but our patterns of thought, our biases, and our blind spots. When we read AI-generated responses, we’re often seeing ourselves—our collective knowledge, cultural assumptions, and ways of reasoning—filtered through a slightly alien lens.

How do you respond to concerns that AI might make us less intelligent?

It’s a critical concern—and a valid one. There’s a genuine risk that passive overreliance on AI will dull our critical thinking. But the solution isn’t to avoid AI; it’s to use it deliberately.

Throughout *PROMPTED*, I emphasize that AI’s true value lies in amplification, not replacement. When we engage actively—questioning outputs, iterating ideas, and staying mentally present—AI becomes a powerful thinking partner.

The key is developing “prompting fluency”: the ability to guide collaboration with AI while keeping your analytical and creative muscles engaged.

What do you think the future of human–AI collaboration looks like?

We’re evolving beyond “prompt engineering” and moving toward more intuitive, conversational interfaces. In the future, AI will adapt to our ways of thinking rather than requiring us to

adapt to theirs. Instead of writing perfect prompts, we’ll engage in dynamic dialogues where the AI helps us refine our questions and explore new possibilities.

But as AI becomes more capable, human judgment becomes even more essential. As machines handle routine cognitive tasks, our roles shift toward curation, strategy, and creative leadership. In a world where anyone can generate content, knowing what’s worth creating becomes the most important skill.

You also created an AI-generated music album. How does that connect with your work on prompting?

Yes—*UENO* is my AI-generated City Pop album, inspired by the rainy streets of Tokyo. It became a living demonstration of the ideas in *PROMPTED*.

What began as a technical experiment turned into something deeper. I was surprised by the emotional weight some of the tracks carried. There were moments that felt genuinely moving—almost uncomfortably so, given they were generated by AI.

This project raised big questions about creativity and authorship. I curated the tracks from thousands of AI outputs and added warmth using vintage hardware. But is curation the same as creation? As AI generates 95% of content, taste and editorial judgment become the most valuable creative assets.

UENO is both a time capsule of 2025-era AI music and a case study in why human direction still matters, even when machines do the production.

What advice would you give to professionals who are just beginning to explore AI?

Start with curiosity, not efficiency. Don’t rush to automate everything. Instead, use AI to expand your thinking.

Adopt a 3–5 iteration mindset: assume your first prompt won’t be perfect. Plan to refine it through conversation with the AI.

And most importantly, preserve your voice. AI should enhance your perspective, not replace it. The professionals who thrive in this new era won’t be those with the cleverest prompts, but those who can think clearly, question effectively, and stay human in the process.

The future belongs to those who can collaborate with uncertainty, think alongside machines, and bring wisdom to a world where intelligence is abundant.

IN CONVERSATION WITH

William Hohl, Christopher Hinds and Kevin Welton

the authors of *ARM Assembly Language 3rd Edition*, explain why Assembly Language still matters in the Age of High-Level Languages.

William Hohl

Engineer, educator, and former Arm university manager; holds six patents and two degrees; now works remotely from his Texas ranch.



Chris Hinds

IEEE 754 contributor, ARM Distinguished Engineer, and floating-point expert with 60+ U.S. patents and a background in teaching.



Kevin Welton

Veteran ARM software engineer and global trainer since 1995; contributed to Linux ports, emulators, and big.LITTLE architecture development.

Why do the three of you believe that teaching assembly language remains useful—even after 40 years of evolution through languages like C, C++, and Java? Isn't assembly language obsolete?

We believe assembly language is akin to learning your ABCs. Yes, it can be one of the most challenging ways to program, but unless programmers truly understand what's happening inside a microprocessor, they'll miss the underlying details that inform how higher-level languages like C++ or even Rust work.

That's part of why our book performs so well in universities—it breaks down complex concepts gradually, allowing students to experiment without the pressure of getting everything perfect from the start. Assembly language is still actively used today. In performance-critical scenarios, algorithms are often hand-coded in assembly and integrated with compiled code.

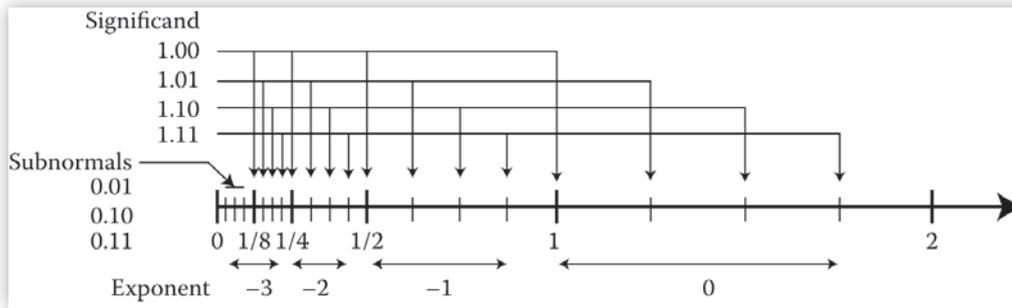
As embedded systems become more complex—supporting features like video, wireless interfaces, and high-end graphics—programmers must learn to extract every ounce of performance from microcontrollers. We believe our book is an essential step toward understanding how to optimize both embedded and high-end systems.

Your book has been adopted in universities worldwide. To what do you attribute its success?

The book actually originated out of necessity. Back in the 1980s and 1990s, there were many assembly language books, but by the early 2000s, there were almost none focused on ARM processors—especially not ones tailored to university students

You either already understood microprocessors and just needed a few specifics to program ARM devices, or you were a beginner stuck trying to decipher technical manuals that weren't designed to teach. Making things harder, most tools required expensive licenses, which students couldn't access easily.

We filled that gap. Our book was written from scratch with students in mind and became a required text in many embedded programming and computer architecture courses. We also made sure it could be used with freely available GNU tools or academic versions of Keil tools—eliminating the barrier of licensing costs. Plus, all three of us worked at ARM for years, which gave us first-hand insights into how ARM products are designed and programmed most effectively.



The third edition includes updates for the ARM v8-M architecture. How does this focus help the book stay relevant in a global context where tech adoption rates vary?

We chose to focus the entire book on the v8-M architecture, leaving v8-A and v9 for future exploration by readers. There were two reasons behind this decision.

First, once students are comfortable with v8-M instructions, it's not a huge leap to move into v8-A or the latest ARM architectures. Second, most students working with embedded systems only need the capabilities of a solid microcontroller. ARM's ecosystem includes dozens of offerings from silicon partners, with various configurations—some include floating-point support, some don't; some include specialized peripherals, others don't.

That flexibility means universities can select hardware that fits their curriculum, whether they're just transitioning to 32-bit controllers or already using our previous edition. Focusing on v8-M ensures the book remains accessible, practical, and globally adaptable.

What value does the introduction of floating-point provide to students, engineers, or programmers?

Many students—and even seasoned programmers—use floating-point data types without really understanding what's happening behind the scenes. High-level languages offer float and double, but few people understand the performance implications or the precision pitfalls involved.

We wrote the floating-point chapters to give readers a solid introduction to both the benefits and potential issues of using floating-point in their code. We chose to focus on microcontrollers featuring the Cortex-M33 with floating-point support because they're affordable and widely available—making them ideal for coursework and independent projects.

The fast floating-point hardware in the M33 offers increased range and precision, which can make code both more powerful and more reliable. Of course, no floating-point discussion would

be complete without covering the IEEE 754-2008 Standard, which we explain in the book—alongside the specific ARM assembly instructions that support it. Our goal is to provide readers with a practical toolbox for writing more efficient floating-point code in both assembly and high-level languages.

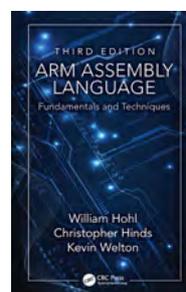
You discuss combining C with assembly language. Is that the ultimate goal in modern programming?

In many cases, combining high-level code with assembly routines is not just useful—it's necessary. This is especially true in deeply embedded systems, where speed and minimal code size are critical.

Our chapter on "Mixing C and Assembly" is focused on the C language but provides general guidance for improving efficiency by incorporating assembly. It covers both inline assembly and linking in external assembly functions. We also highlight common challenges and strategies for getting the code right the first time.

Additionally, we explore features in the ARMv8-M architecture that may not be directly supported by existing compilers—for instance, saturating arithmetic instructions, which are incredibly useful for audio and graphics processing.

Even though the industry is trending toward more abstracted, high-level languages, we don't expect assembly language to disappear. Instead, we see it continuing to play a critical role in performance-sensitive and hardware-level programming.



ARM Assembly Language

Fundamentals and Techniques, 3rd Edition

William Hohl, Christopher Hinds and Kevin Welton

September 2025

ISBN 9781032951812

368 Pages, 103 B/W Illustrations

Subject: Computation/ Simulation & Modeling

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Qingxu (Bill) Jin

Assistant Professor at MSU; leads RISE Lab researching durable, sustainable infrastructure materials and construction decarbonization.



Xue (Ida) Chen

Global R&D Fellow at Dow; leads chemical decarbonization innovations with 150 patents and multiple global technology awards.

Fan Shi

Senior scientist at NETL; expert in critical metals recovery, energy conversion, and decarbonization; R&D 100 and Edison Award winner.

Dushyant Shekhawat

Team lead at NETL; specializes in catalysis and energy systems with 200+ publications and 15 patents.

IN CONVERSATION WITH

Qingxu (Bill) Jin, Xue (Ida) Chen, Fan Shi, and Dushyant Shekhawat

editors of *Industrial Decarbonization: Materials, Methods, and Developments*.

The book that industrial transformation has been waiting for

Our book, *Industrial Decarbonization: Materials, Methods, and Developments*, represents the first comprehensive sector-specific roadmap for transformative energy innovations. It advances smarter, cleaner, and more efficient operations across multiple critical sectors.

What distinguishes this work is its integration of diverse perspectives—from leading academic institutions worldwide and industrial experts in key sectors (chemical engineering, steel production, cement and concrete manufacturing, construction) to visionary policy architects. The book presents a wide array of breakthrough strategies, such as the development of novel materials, electrochemical innovations, advanced heat recovery systems, thermal energy storage, CO₂ utilization technologies, system-level integration approaches, and circular economy frameworks. Each strategy is designed to significantly improve energy efficiency while substantially reducing emissions.

Through real-world case studies and practical implementation guides, this book provides researchers, engineers, and decision-makers with actionable tools to accelerate the transition toward a more sustainable and resilient industrial landscape. We are deeply grateful to our contributing authors, whose cross-sectoral expertise demonstrates how innovations from one industry can be adapted and scaled across others, catalyzing a ripple effect of transformative solutions.

Why focus on industrial decarbonization now?

Our editorial team—comprising experts from academia, industry, and government—recognizes that the pace of industrial decarbonization varies significantly by sector. The challenges are formidable: massive operational scales, complex manufacturing processes, reliance on high-temperature systems, and a lack of standardized best practices. Yet within these complexities lies a profound opportunity for innovation and transformation.

Many industrial emissions result from systemic inefficiencies. By revolutionizing how energy is generated, transferred, and consumed, we can achieve significant environmental gains. This book addresses that critical gap by presenting cutting-edge practices, breakthrough efforts, and forward-looking insights. It illustrates how efficiency advancements and technological innovation can fundamentally reshape essential industrial sectors.



Installation of the absorber in Summer 2023. The absorber is a key component of the Brevik carbon capture and storage (CCS) facility. (Chapter 9: Heidelberg Materials Carbon Capture and Storage Demonstration Projects, Heidelberg Materials)

Which sectors and strategies does the book address?

The book opens with system-level strategies, including robust decision-making frameworks that integrate cost-effectiveness and energy innovations. It then explores key sectors—chemicals, iron and steel, cement and concrete, asphalt processing, and construction—offering insights tailored to each domain’s unique challenges.

Each chapter identifies the primary emission sources in its sector and presents a comprehensive range of both established and emerging innovations. Special attention is given to technologies that enhance energy efficiency, such as waste heat recovery, process electrification, and advanced energy conversion. By minimizing waste, optimizing workflows, and implementing next-generation technologies—like heat exchangers, microwave-assisted heating, and intelligent control systems—these industries can decarbonize meaningfully while maintaining performance and competitiveness.

Additionally, the book explores transformative solutions like thermal energy storage, CO₂ capture and utilization (CCU), and the growing role of digitalization in real-time energy monitoring and optimization.

The concluding chapters highlight circular economy principles and emerging carbon utilization technologies, offering valuable applications for academic institutions, private industries, and public-sector organizations alike.

How does this work apply globally?

Industrial decarbonization is a global imperative, with energy efficiency providing a universally compelling value proposition—reducing both pollution and operating costs. The book’s case studies and methodologies are designed for international application, drawing on diverse geographic and operational contexts.

Whether it’s hydrogen in steelmaking, electrochemical processes in chemical manufacturing, or fly ash in low-carbon concrete, these solutions are adaptable and scalable across global markets and regulatory environments.

Who can benefit from this book?

Industrial decarbonization is rapidly becoming one of the most dynamic and impactful areas for professionals focused on energy innovation, novel materials, and practical transformation. It offers major opportunities for research and career growth in fields like data science, materials engineering, energy systems modeling, and policy analysis.

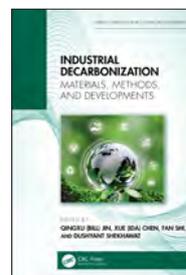
Whether redesigning kilns, simulating energy flows, or developing sustainable procurement strategies, professionals in this space drive meaningful change. This book provides the technical knowledge and strategic insight needed to succeed and lead in this evolving field.

What’s your vision for the future of industrial transformation?

We envision this book as a key resource for navigating the technical, economic, and operational complexities of industrial decarbonization—whether you’re an emerging academic, an experienced engineer, or a forward-looking policy leader.

This is more than a technical manual. It aims to instill confidence and inspire action—optimizing processes, scaling technologies, and reimagining regulations. Advancing industrial energy efficiency lays the foundation for a smarter, more resilient, and more sustainable global economy.

The way forward requires collaboration across traditional boundaries. By uniting insights from research, operations, and policy, we can accelerate the transformation our planet urgently needs. This book is our contribution to that vital, collective effort.



Industrial Decarbonization

Materials, Methods, and Developments
Edited by **Qingxu (Bill) Jin, Xue (Ida) Chen, Fan Shi and Dushyant Shekhawat**

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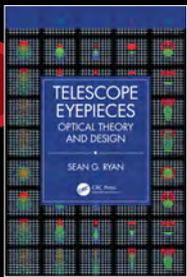
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is a professional astronomer with almost fifty years' experience as an amateur observer. He was appointed Professor of Astrophysics at the University of Hertfordshire in 2006, where he was Head and Dean of the School of Physics, Astronomy and Mathematics for ten years. He has published over 100 research papers on observational astronomy, and has co-authored several textbooks, including *Visual Astronomy with a Small Telescope*.



Telescope Eyepieces

Optical Theory and Design

Sean G. Ryan

November 2025

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232 Pages, 23 Color & 22 B/W Illustrations

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IN CONVERSATION WITH

Sean G. Ryan

the author of *Telescope Eyepieces*, explains optical theory and design.

An Eye for Optics

Anyone who has looked through a telescope, binoculars, or a microscope knows the magical feeling of encountering a new view of the world. Whether bringing distant objects into plain sight or revealing details of tiny structures that are barely visible to the unaided eye, optical instruments feed our curiosity. They open new windows into the world around us, allowing us to see things that would otherwise escape our notice.

The ubiquity of mobile phones and large display screens has made the visual image an ever more prominent feature of our lives, and the internet means a digital image can be created in one location and readily shared with millions of others elsewhere. But is viewing a digital image the same as seeing the real thing? Is a photograph of the Taj Mahal or a Norwegian fjord the same as seeing it yourself and experiencing the wow factor of perceiving it with your own eyes? Moreover, in the age of computer-processed images and now generative AI, is the digital image even real?

Visual instruments such as telescopes, binoculars, and microscopes allow users to engage directly with the real thing, observing hidden treasures of the universe with their own eyes. The designs of such instruments vary considerably, but all share a common element: the eyepiece. When you look through these instruments, placing your eye close to a small, rounded glass lens, it is this eyepiece that becomes your window on the world beyond.

But what is this small glass lens, and what does it do? The glass itself is a mixture of sand, soda ash, limestone, and metal oxides—normally opaque materials that you wouldn't ordinarily associate with a highly transparent substance like glass. Melted, fused, ground, and polished into a particular shape, a biconvex lens is capable of refracting (bending) the light from the object being viewed in such a way that it is directed into the eye and, at the same time, enlarged to reveal a more detailed view. But sizes can be deceptive: even in a large telescope, the small set of lenses that constitutes the eyepiece packs more optical punch ("power," to use the correct optical term) than the large lenses or mirrors that dominate the appearance of the instrument. The primary optics of a telescope or binoculars gather as much light as possible, but it is the job of the eyepiece to magnify it, direct it into the small pupil of the human eye, and do so in a way that reveals the object's details. This is no mean feat.

Because of the challenges posed by funneling the light from a large telescope or binocular lens into the pupil of the eye—an opening no more than 7 mm across and even smaller in bright light—and at the same time conveying a highly detailed image, eyepiece designs have become increasingly complex. They almost never consist of a single biconvex lens like a magnifying glass.



Instead, designs utilize two, three, four... as many as eight individual lenses, some cemented together as doublets or triplets, others sitting on their own, to optimize the focusing ability of the assembled eyepiece.

Not all lens elements in an eyepiece are focusing lenses; some actively defocus the light. Why? The challenge in delivering the desired level of detail in an image is not just about how much it is magnified—it also depends crucially on how well the eyepiece refocuses the rays from different points of the object. This must be achieved if the whole image is to be in focus at the same time, including points both in the middle and around the edge of the field of view. It is also important that all colours of light are focused equally well, in the same image plane, and to the same magnification. This is particularly challenging for lenses, as the refraction of light depends on its wavelength—which is the property we perceive as colour. A judicious combination of focusing and defocusing lenses allows an eyepiece designer to balance out over-refraction of some rays and under-refraction of others to try to ensure, as much as possible, that all parts of the view are sharply focused and distinct, in all colours.

Generally speaking, increasing the number of individual lenses in an eyepiece improves the quality of the images it delivers, but also increases its size, weight, and cost—and not just by a small amount. The more lenses there are, the more opportunity there is for stray reflections of light to occur at one or more of the lens surfaces. Such reflections produce out-of-focus ghost images that reduce the contrast of the intended target, making it indistinct and hazy. Balancing the many design trade-offs of image magnification, field of view, clarity, and contrast against eyepiece complexity, size, weight, and cost has led to a large number of eyepiece designs, suited to particular observing tasks to greater or lesser degrees. The capabilities of these small optical assemblies, usually fitting comfortably into one hand, are the result of the proficiently exercised craft of optical design—a meeting place of optics theory, mathematics, computing, and master craftsmanship.

The next time you make use of one of these instruments and open your own new window on the hidden universe, take a moment to appreciate the optical designers who made it possible.

IN CONVERSATION WITH

Antônio Carlos Fontes dos Santos and Marcio Velloso da Silveira

the authors of *Teaching Introductory Physics to Visually Impaired Learners* on bringing together theoretical tools necessary to value and promote inclusive education.

What motivated you to write this book?

Antonio – My motivation to write a book on teaching physics to blind students stems from several important educational, ethical, and scientific considerations. Physics—like all sciences—should be accessible to everyone, regardless of visual ability. Creating a book tailored to blind students ensures they can engage with the subject meaningfully, promoting educational equity and social inclusion. It helps dismantle barriers that have historically limited the participation of visually impaired individuals in STEM fields.

Providing materials specifically designed for teachers of blind students fosters autonomy in learning physics. It empowers students to explore and understand complex scientific ideas independently, building confidence in their academic and professional pursuits.

There is a significant shortage of high-quality physics educational materials designed for blind students. Writing such a book addresses this gap, contributes to a more inclusive body of educational literature, and sets a precedent for other disciplines to follow.

Designing physics content for blind learners also encourages teachers to rethink how physics is taught and conceptualized. This leads to deeper insights into physics pedagogy, pushing educators to focus on conceptual understanding, verbal reasoning, and multisensory approaches.

By making physics more accessible, the book helps increase the representation of blind individuals in STEM, enriching scientific research and innovation through diverse perspectives and problem-solving approaches.

In many countries, there is a legal and ethical obligation to provide accessible education for people with disabilities. Creating such resources aligns with these obligations and upholds fundamental human rights.

For educators, researchers, and authors, contributing to inclusive education is also personally fulfilling. It allows them to make a tangible difference in the lives of students who might otherwise be excluded from fully engaging with science.

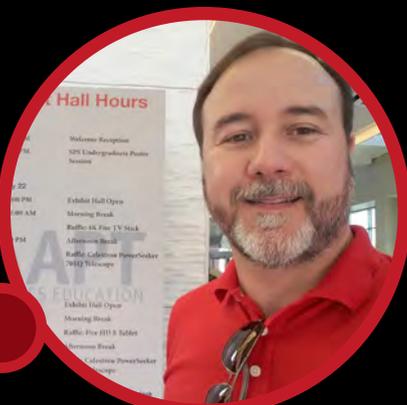
Teachers who have had a visually impaired student in class know how difficult it is to find support to meet their needs. A search for textbooks and articles that enable the preparation of accessible physics classes often yields few results. Although research in this area has evolved in recent years, there is no strong policy dedicated to inclusive physics education for visually impaired students—only a few scattered initiatives.

In light of this urgent demand—and the growing success of inclusion policies that have encouraged more students to pursue fields like STEM—we saw the need to support both teachers and students by bringing together a variety of approaches to different physics topics in one book.



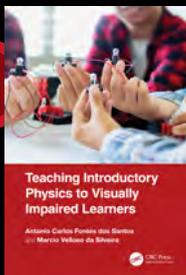
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Teaching Introductory Physics to Visually Impaired Learners

Antônio Carlos Fontes dos Santos and Marcio Velloso da Silveira

October 2025

ISBN 9781032829715

208 Pages, 24 Color & 2 B/W Illustrations

Subject: Physics / Teaching Methods, Inclusivity, Visual Impairment

www.routledge.com/9781032829715

What are the challenges involved for teachers of students with visual impairments?

Antonio – Teaching students with visual impairments, particularly in physics, presents several challenges that require thoughtful adaptations of pedagogy, materials, and assessment methods. Physics relies heavily on visual elements such as graphs, diagrams, mathematical notations, and experiments.

Key challenges include converting complex diagrams into tactile or auditory formats without losing critical information; clearly and comprehensively describing visual phenomena in non-visual language; and developing tactile models that accurately represent physical systems.

Standard textbooks are not designed with blind students in mind. There is a scarcity of accessible materials, such as Braille textbooks, tactile graphics, and screen reader-compatible content.

Physics also involves abstract concepts that can be difficult to grasp without visual representation. Teachers must use multisensory approaches—verbal explanations, sound, touch, and movement—to convey spatial relationships and physical phenomena. This ensures students develop true conceptual understanding rather than relying on rote memorization.

Marcio – When a teacher receives a visually impaired student for the first time, they often feel unprepared. While some teacher training programs include content on inclusion, they usually don't offer practical preparation for teaching a diverse classroom.

The absence of vision in even one student requires many adjustments that must be planned throughout the teaching process. Since this student cannot see the board, the teacher must avoid gestures or pointing without verbally explaining what they are doing.

It's also necessary to create tactile versions of images, graphs, and diagrams, which takes extra preparation time. However, this benefits the entire class by enriching and diversifying the teaching approach.

While the process can be demanding initially, the models and examples in our book aim to ease the workload and provide tried-and-tested solutions that help ensure success for both the teacher and the student.

How does your book help teachers of students with visual impairments?

Antonio – The book serves as a comprehensive guide, source of inspiration, and practical toolkit. It supports teachers in delivering effective, inclusive, and empowering physics education for students with visual impairments, ensuring they too can explore and succeed in science.

It presents tried-and-tested teaching strategies—such as the use of tactile models, auditory descriptions, and kinesthetic activities—helping teachers move beyond trial and error. It provides structured, reliable methods for building tactile graphics, representing formulas in Braille, adapting experiments, and more, saving educators time and effort.

Marcio – Although inclusion laws have opened access for visually impaired students to enter STEM fields, these students often do not receive a solid foundation in physics. This is due to multiple factors and relies heavily on the initiative of individual teachers.

As we conducted our research, we were often contacted by visually impaired students asking for guidance they could pass on to their teachers. In other words, these students—motivated to study physics at both high school and university levels—sought advice and tools to help bridge the instructional gap.

Our book aims to answer that need, offering diverse approaches and adaptations to promote autonomy and inclusion.

Can the methodologies presented in the book be implemented worldwide?

Antonio – Yes, the methodologies in the book can be implemented globally, with attention to local resources and cultural contexts. Physics is a universal science, and its foundational concepts are taught similarly worldwide. The strategies we present—such as multisensory teaching, tactile learning, verbal descriptions, and kinesthetic activities—are based on core cognitive principles and are not culturally specific.

Educators around the world can adapt these methods to meet their curriculum requirements and available tools while maintaining their effectiveness for visually impaired students.

Marcio – We've aimed to provide practical content supported by references so teachers can apply the methodologies quickly—an essential consideration when time is short and the teacher must act fast to include all students.

We also hope that for teachers already familiar with the basic principles of inclusive education, this book will inspire the development of even more innovative teaching materials and methods.

Much valuable work happens in classrooms every day that never receives wider recognition. We hope this book reaches those dedicated educators and affirms that their efforts matter greatly to the future of inclusive education.

IN CONVERSATION WITH

Heidi Burgiel and Chaim Goodman-Strauss

the authors of *The Magic Theorem*, about the theory of the Symmetries of Things.

John H. Conway

was a legendary Princeton mathematician known for contributions to group theory, knot theory, and recreational mathematics.



Heidi Burgiel

is a geometer and educator whose career spans math, computing, and outreach across universities and science institutions.



Chaim Goodman-Strauss

is a mathematician and math communicator, formerly at University of Arkansas, now Outreach Mathematician at MoMath.

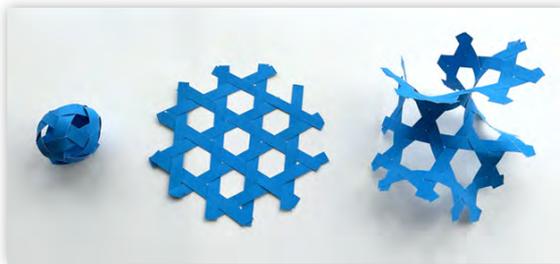
The Magic Theorem is John Conway's theorem that classifies the possible symmetrical patterns on the plane with a simple arithmetic count: there's a "cost" to the various features a symmetrical pattern might have, and the theorem asserts that the planar symmetrical patterns are those whose features add up to a total cost of exactly \$2.

That's quite a big deal. Like many others, John Conway had been searching for a straightforward way to understand planar patterns. Previous approaches to listing these patterns felt ad hoc, with many cases to sort through and no real hope of a unifying principle. That changed in the mid-1980s when John learned of Bill Thurston's orbifold classification of symmetry types.

Essentially, Thurston used topology to constrain geometry. Each pattern is associated with a special surface—the pattern's orbifold—created by declaring that points that appear the same in the pattern are to be fused together and henceforth considered the same point. For example, the two sides of the heart-shaped pattern below at left are identical (at least ideally). By folding the heart over and fusing identical points together, we get the half-hearted figure at right—the orbifold of the heart-shaped pattern. This orbifold has a newly formed boundary, corresponding to the mirror line down the center of the heart. This boundary, a feature of the topology of the orbifold surface, is recorded by Conway with a * (a largish asterisk) in his orbifold notation.

The power of this approach comes from the well-understood classification and geometrization of surfaces—the topology and geometry of a surface are tightly bound, each constraining the other. There are only so many options for a surface that has the flat geometry we see in the plane, and these are exactly what the Magic Theorem is counting. The topological building blocks of an orbifold have a "cost", and for a planar pattern, the cost must total exactly \$2. There are precisely 17 ways this can happen. These are the planar symmetry types—named, organized, and accompanied by a clean proof that these are all the possibilities

But this is just part of a larger family of Magic Theorems! The spherical symmetrical patterns are those with a cost of less than \$2. More expensive totals yield patterns in the hyperbolic plane. Even frieze patterns fit into this scheme. The unity of this approach is deeply satisfying.



Here's a picture we like, of three woven patterns in the geometries of the sphere, plane, and hyperbolic plane. They look essentially the same—triangles arranged around holes.

As we explore in the book, their orbifolds are basically the same too, differing by just one parameter (5, 6, 7).

When John learned of Thurston's orbifolds, he devised orbifold notation and began introducing it to the world. Two young graduate students, Heidi and Chaim, came under its spell and began taking up the cause—creating materials and curricula for teachers, outreach, and their own courses. All of that was progressing, and then in late 1999, Heidi approached John and Chaim about writing what became *The Symmetries of Things*, a definitive account of Conway's orbifold notation and the Magic Theorem. A mere eight years later, *The Symmetries of Things* (SoT) appeared.

In that first edition, we were ambitious. We imagined SoT for a wide audience, but we couldn't resist including lots of additional material—on color symmetries, technical applications of the orbifold theory, the symmetries of space, and much more. The book grew and grew until we finally had to stop. As wonderful as SoT is, it is expensive and encyclopedic—not exactly the lightest introduction to the material.

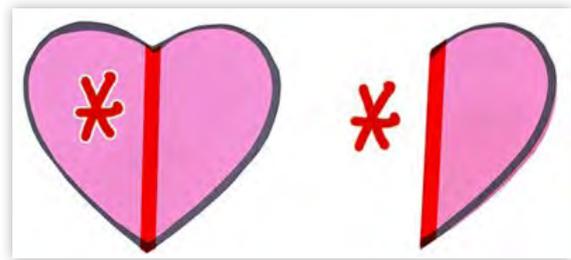
We always intended to prepare a second edition of SoT, but John grew frailer and the list of potential additions kept growing. Eventually, we ran out of time: our dear friend, teacher, mentor, and senior author passed away in April 2020. After that, a full new edition felt overwhelming.

After some months, we realized we could return to the core of the original book and produce a slimmer, more accessible volume that brings the orbifold theory and its Magic Theorem to a wider audience. We certainly had plenty of new material just on that!

What's new in *The Magic Theorem*?

The Magic Theorem is really a new book in its own right, aimed at reaching as many people as possible. It's Part One of *The Symmetries of Things*, almost doubled in length, with dozens of hands-on activities, real-world examples, and many side discussions. It's even more thoroughly illustrated, and we're able to showcase wonderful new work by artists produced since SoT appeared. Every page, we hope, is a real pleasure.

All this is accompanied by dozens of supplemental, hands-on teaching materials available on the book's website: themagictheorem.com. And Chaim is excited to finally release his Kaleidesign software, which allows users to create symmetrical images—like the ones in the book—from their own photos or even a webcam.



Why did you want to write this new book?

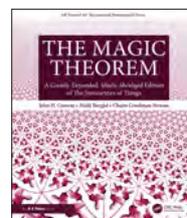
The Symmetries of Things initially aimed to introduce orbifold theory to a wide audience, showcase its power, and encourage its application—but in the end, it contained a great deal more. This new book seeks to share the Magic Theorem itself more broadly, inviting any symmetry practitioner—fabric designers, math-artists, chemists, curious readers—to make these techniques their own. We truly believe, with good reason, that this is the right approach to understanding two-dimensional symmetrical patterns—at least their mathematical classification—and we'd like to see that perspective spread widely.

Who is the book aimed at, and who would you love to read it?

The book is informal and open-hearted. We'd love for anyone interested in symmetry, from any background, to engage with it and learn how to use the Magic Theorem—even dig into the orbifold theory behind it. We've written much of it with kids in mind, frankly—and with those who work with kids. There's a lot to try out and explore!

How do the contributions from the different authors come together in the book?

This book was shaped by the absence of its senior author. The text in *The Magic Theorem* is mostly from SoT, largely written by John. Chaim prepared the new material and most of the revisions. Heidi was instrumental in the initial layout and in the editorial process, ensuring the tone and level of the material would be accessible to a broad audience.



The Magic Theorem

A Greatly-Expanded, Much-Abridged Edition of
The Symmetries of Things

**John H. Conway, Heidi Burgiel and
Chaim Goodman-Strauss**

July 2025

ISBN 9781032162003

192 Pages, 383 Color Illustrations

Subject: Mathematics

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IN CONVERSATION WITH

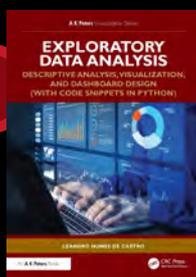
Leandro Nunes de Castro

the author of *Exploratory Data Analysis*.



Leandro Nunes de Castro

is a Full Professor at Florida Gulf Coast University (FGCU), where he directs DENDRITIC, a Human-Centered AI and Data Science Institute. He holds a Ph.D. in Computer Engineering from Unicamp and has held visiting positions in the UK, Malaysia, Brazil, and Spain. Leandro's research focuses on Natural Computing and Machine Learning, with applications in data analysis and optimization. He has authored several books, including *Artificial Immune Systems* and *Fundamentals of Natural Computing*, and published over 250 academic papers. Recognized among the top 2% of researchers globally by PLOS Biology, he also founded two research labs and has played key roles in academia and entrepreneurship, co-founding AI startups such as Tuilux and Somma.ai, and serving as an angel investor in others.



Exploratory Data Analysis

Descriptive Analysis, Visualization, and Dashboard Design (with Codes in Python)

Leandro Nunes de Castro

September 2025

ISBN 9781032939827

342 Pages, 82 Color & 9 B/W Illustrations

Subject: Computer Science

www.routledge.com/9781032939827

Beyond the numbers: why exploratory data analysis is the art and science of true insight

In an era defined by an unprecedented deluge of data, our ability to collect information has far outpaced our capacity to truly understand it. We are surrounded by data—every interaction and every moment generates information waiting to be explored. Yet this abundance often leads to a paradox: we have more data than ever, but we often struggle to extract meaningful insights or communicate them effectively. This is where Exploratory Data Analysis (EDA) emerges not merely as a technical step, but as a critical art and science that transforms raw figures into actionable intelligence.

The traditional approach to decision-making, based primarily on intuition or past experience, is becoming increasingly obsolete in our fast-paced, dynamic world. Raw data, in its unprocessed form, is inherently messy, incomplete, and often misleading. It can mask critical patterns, hide anomalies, or present a biased reality if not properly investigated. This is why EDA is positioned as the indispensable first step in any data science workflow. It involves deeply engaging with the data, understanding its unique characteristics, and preparing it for deeper analytical or modeling phases. This foundational understanding is essential to ensure the reliability and accuracy of any subsequent insights derived from the data.

The essence of EDA lies in its dual approach: combining rigorous descriptive analysis with powerful data visualization. Descriptive analysis provides the quantitative backbone, generating numerical summaries that characterize the dataset's structure and variables. Measures of central tendency, variability, and distribution offer initial statistical insights vital for understanding the data's inherent properties. However, as famously demonstrated by the Anscombe Quartet, relying solely on summary statistics can be deceptive—vastly different datasets can yield identical statistical summaries. This highlights the profound limitations of numbers alone.

This is where data visualization transcends mere presentation to become a core analytical tool. Visualizations enable us to perceive patterns, trends, and outliers immediately—insights that might be completely obscured in tables of numbers. By leveraging principles of visual processing, such as preattentive features (like color, shape, and size) and Gestalt principles (such as proximity and similarity), we can design graphs that are both intuitively understood and deeply engaging. A well-designed visualization transforms complex data into something visually compelling and memorable, fostering a deeper connection with the audience and ensuring that insights are not just seen but felt. It's about making the invisible knowledge embedded in the data visible and understandable.

Moreover, the real world does not always present data in neat, structured tables. Our analytical approach must evolve to navigate diverse data landscapes, including time series, textual data, and complex networks. Each of these data types carries unique characteristics and demands specialized analytical and visualization techniques. For instance, analyzing time series data requires understanding temporal patterns, trends, and seasonality, often revealing insights through methods like moving averages or seasonal decomposition. Text and document data, being largely unstructured, necessitate techniques from text mining and natural language processing to extract meaning, quantify linguistic content, and visualize patterns using tools like word clouds or categorical heatmaps. Similarly, complex relationships within social structures or infrastructure systems are best understood by applying graph theory to networks—analyzing properties like node centrality and visualizing connections through node-link diagrams or adjacency matrices. By addressing these special data types, EDA equips practitioners to tackle the full spectrum of real-world data challenges.

Ultimately, the analytical journey culminates in effective communication through data storytelling and dashboard design. It is insufficient to merely discover insights—they must be translated into a compelling narrative that resonates with the audience and drives action. This involves careful consideration of the audience, the core message, and the most impactful way to contextualize and present the findings.

Dashboards serve as the ultimate interactive interface for this storytelling—consolidating complex analyses into intuitive, visually appealing displays that allow users to explore data dynamically, apply filters, and receive real-time updates. They are crucial tools that empower decision-makers, offering customizable views and actionable insights into key performance metrics and trends. A well-designed dashboard is not just a report; it is a living, breathing tool that supports strategic decisions, optimizes operations, and enhances understanding.

Exploratory Data Analysis is designed to empower a new generation of data professionals—and indeed, anyone curious about data. By providing a hands-on, practical guide with Python code snippets and real-world examples, it aims to inspire readers to “think outside the chart.” It fosters a mindset that transcends mere data processing, encouraging readers to unlock the full potential of data through innovative design and to create visuals that inform, delight, and engage audiences long after the numbers have been crunched. In a world abundant with information, mastering EDA is not just an advantage—it is an essential skill for uncovering true insight and driving meaningful change.

IN CONVERSATION WITH

Emily Patterson-Kane

the co-author of *Animal Welfare Science*.

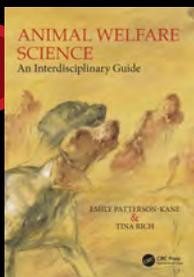
Emily Patterson-Kane

is a behavioral psychologist and animal welfare scientist, researches cruelty, education, and lab animal needs. She works at ASPCA and co-authored *Sciences of Animal Welfare* and *Rethinking the American Animal Rights Movement*.



Tina Rich

is a scientist and writer with a PhD in immunology, specializing in animal welfare. She's worked globally in academia, advocacy, and research, and now lives in New Jersey.



Animal Welfare Science

An Interdisciplinary Guide

Emily Patterson-Kane and Tina Rich

September 2025

ISBN 9781032446363

312 Pages, 35 Color & 13 B/W Illustrations

Subject: Veterinary Science

www.routledge.com/9781032446363

What inspired you to write *Animal Welfare Science*?

There's a gap—plain and simple. Despite the growth of the field and increasing public interest, there was no generalist text that could confidently support anyone wanting to master the overlap between science and animal welfare—be they students, professionals, advocates, or simply intellectually curious. This book is meant to provide foundational knowledge for animal welfare scientists while also offering fresh perspectives and filling in gaps for more advanced readers. It's designed to be accessible regardless of your background—whether you're coming from psychology, veterinary medicine, farming, animal training, or just have a lifelong interest in animals.

But there's another gap we had to confront: the uneasy relationship between passionate animal advocacy and the supposed objectivity of science. Animal welfare lives right in that space. We wanted a book that didn't sugarcoat the complexity or drown readers in jargon. This project was born out of frustration—and a stubborn desire to carve out space for curiosity, nuance, and the occasional heretical idea. We want readers to be better equipped to move forward as animal welfare scientists without being engulfed by silos or suffocated by orthodoxies.

This book is quite unorthodox for a textbook. Why was that important?

Because animal welfare science isn't tidy—it's not a single discipline. It's a shapeshifter, drawing from philosophy, ethology, neuroscience, economics, and policy. So instead of forcing it into a rigid structure, we let the messiness breathe. We use stories and thought experiments. Yes, there's science, but there's also an honest reckoning with the fact that science doesn't operate in a vacuum—especially not in this field.

It was ironic that we discussed how regime changes further afield could impact animal welfare and then found ourselves in the middle of one. We were not naïve about what might happen in a second Trump term, but the DOGE (Department of Government Efficiency)-inspired cull of federal jobs was not on the radar. Losing bird flu experts, animal carers, handlers, and inspectors—combined with deregulation—adds up to safety fears for people and animals alike. Threats to censor federal scientists and the stripping of research funds make it inevitable that many scientists will be lured abroad. A security advisor to the UK government put it succinctly when she declared that the Trump White House is more like a royal court than an administration.

We felt compelled to alert the reader to these developments—but who knows if this is the new normal or just a hiatus?



How does the book handle the big “C” word—consciousness?

With mild obsession. For many people, consciousness is the heart of the matter. If animals don't have subjective experiences, welfare is a non-issue. (Although the many methods academia has used to evade this issue are certainly weighty enough to consider—and some of our readers may well reside there.) And if animals are conscious, then everything we do to and for them becomes ethically weighty.

One of us dove down the rabbit hole of theories of mind, dragging the other along for the ride. That journey is included in the book—and was probably rewritten ten times, as we didn't want to shortchange the reader. It's weird, but usefully weird, and only a fraction of the full story. We didn't shy away from including bold but controversial theories.

It's intriguing to think that consciousness might lie outside of computation—or perhaps it's just comforting to think that, despite AI, we're still special. Animal welfare science is just one of many fields grappling with the nature of consciousness, but it has the potential to change how we understand—and act on—this radical concept.

My coauthor admits to rooting for a physicalist worldview nested within another that lies beyond our scientific wheelhouse. Skeptics, she points out, will cite the extraordinary success of physicalist science—and they'd be right. But that ignores the inconvenient truth that none of these developments needed to “know” the correct worldview—they would have happened regardless. Only the hardest experiments of all demand an accurate ordering of mind and matter.

That's why it's intriguing that we still struggle with those questions: What is consciousness? What is matter? What is life? Is mind really subordinate to matter? And wouldn't biology be so much more interesting if it wasn't?

If nothing else, the 2022 Nobel Prize for Physics put the nail in the coffin for local reality—proving that our universe is just as weird as Einstein feared. Perhaps embracing that weirdness is the way forward.

What do you hope readers take away?

That you don't have to be a specialist to think critically about animal welfare. And that “thinking critically” doesn't mean cold detachment—it means being honest about what you know, recognizing what others bring to the table, and embracing the glorious mess of it all.

Also, maybe that sea slugs are solar-powered, whales gossip, and we've probably been underestimating everyone. Animal welfare science is pluralistic by nature. If we try to stuff it into a “my way or the highway” model of learning, we strangle its potential.

This book offers a toolkit of frameworks, evidence, and lived experiences—and invites readers to build confidence and expertise navigating this essential space.

What's next for animal welfare science?

That depends on how brave we're willing to be. The next frontiers aren't just technical—they're political, economic, and cultural.

Can we protect animal welfare in a post-truth era? Can we build food systems that don't rely on suffering? Can we take nonhuman minds seriously without romanticizing them? Is the concept of apolitical science naïve—or just downright dangerous—in 2025 USA? How do we protect animals when we can't even protect ourselves?

Animal welfare goes by the wayside when agricultural laborers must dodge ICE detention or when pet owners, crippled by cost, can't afford to care for their companion animals. Can non-profits continue to advocate effectively if they fear losing their tax-exempt status?

The cultural battles are fascinating—DOGE petitioned by PETA to close primate research centers, and then the NIH committing to the reduction of animal use in experimentation. There will be wins, but the transactional, populist, and chaotic backdrop to much of this is likely detrimental to the welfare of people and animals alike.

The answers are going to be messy. But they matter. And they'll come from future generations of animal welfare scientists—well-informed, confident, and, crucially, unshackled from the silos and silences of overly didactic training.

IN CONVERSATION WITH

Marie Holowaychuk

the author of *A Compassionate Calling*, on what it really means to be a veterinarian.

Dr. Marie Holowaychuk

is a board-certified veterinary specialist, speaker, and wellness advocate with over 20 years of experience in clinical practice, academia, and consulting. After completing veterinary school in Canada and advanced training in the U.S., she served on faculty at the Ontario Veterinary College and later worked as a relief veterinarian across North America. Her firsthand experience with burnout and compassion fatigue inspired her focus on mental health, workplace culture, and sustainable veterinary careers. Marie is the founder of Reviving Veterinary Medicine, offering evidence-based resources and training in self-care, communication, and resilience. She's a certified coach, yoga and meditation teacher, and the host of the *Reviving Vet Med* Podcast. Through coaching, writing, and speaking, Marie empowers veterinary professionals to prioritize wellbeing and create meaningful, fulfilling lives.



A Compassionate Calling

What It Really Means to Be a Veterinarian

Marie Holowaychuk

August 2025

ISBN 9781032389035

320 Pages, 8 B/W Illustrations

Subject: Veterinary Medicine

www.routledge.com/9781032389035

In a nutshell, what is *A Compassionate Calling* all about?

A Compassionate Calling offers an unflinching, deeply personal, and evidence-based look into the realities of the veterinary profession. Through 40 thought-provoking chapters, I aim to shed light on the challenges, joys, and evolving landscape of veterinary medicine. The book draws from my 20 years of experience as a veterinarian, specialist, academic, and wellness advocate. It's part memoir, part research synthesis, and part call to action.

At its heart, the book reveals what truly happens behind exam room doors—and the emotional cost of providing care in a field where life, death, ethics, and economics collide. While many outside the profession view veterinarians through a nostalgic or idealized lens, the reality is often far more complex. I explore the hidden curriculum of veterinary school, the impact of on-call work, the toll of euthanasia, moral distress and burnout, and the sobering statistic that fewer than half of veterinarians under 35 would recommend the profession to others.

Yet it's not all heavy. I also celebrate the moments of connection, healing, and purpose that keep so many of us going. And I emphasize that veterinary professionals—despite systemic challenges—are not broken. We are human, and this profession requires more than technical expertise; it demands compassion, courage, and an incredible amount of resilience.

Although the book focuses on veterinary medicine, its themes—mental health, caregiver fatigue, boundary-setting, ethical complexity—are universally relevant. It's a book for veterinarians, aspiring professionals, pet owners, and anyone hoping to understand the human side of animal care.

What motivated you to write the book?

The seed for this book was planted years ago when I came across a study in the *Journal of the American Veterinary Medical Association* revealing that fewer than 50% of veterinarians would recommend the profession to others. That finding hit me hard—and stayed with me. As someone who had always been passionate about veterinary medicine, I found myself wondering: How did we get here? How can something so meaningful become so disillusioning for so many?

That statistic launched a period of personal reflection. I looked back on my own journey—from a child growing up in my mom's vet clinic, to my pre-vet years, vet school, internship, residency, academia, and eventually my work as a speaker and wellness advocate. Along the way, I noticed patterns. Conversations that happened only in whispers. Struggles silently endured. Misconceptions held by pet owners—and even by veterinary professionals themselves.



I realized there was a missing conversation: a broader, more public, more honest dialogue about what it means to work in veterinary medicine today. I wanted to write the book I wish I'd had earlier in my career—something that tells the truth while still offering hope.

Writing this book was also a very personal process. I began during the pandemic and completed it after becoming a mother—both of which reshaped my understanding of balance, identity, and sustainability. There were days I wrote through tears, and days I couldn't write at all. But I kept going because I knew this story needed to be told—not just mine, but the collective story of veterinary professionals everywhere.

Who did you have in mind as your 'typical' reader?

Initially, I wrote this book for my veterinary colleagues—those in the trenches of clinical practice who are feeling overwhelmed, underappreciated, or simply exhausted. I wanted them to feel seen. I wanted them to recognize that their experiences—while difficult—are shared by others. That they're not alone.

But as the manuscript evolved, so did my audience. I began writing with future veterinarians in mind—those wide-eyed students who dream of cuddling puppies and saving lives, but don't yet grasp the ethical dilemmas, emotional labor, and financial strain that often accompany the work. I wanted to offer them an honest portrait of what lies ahead—not to discourage them, but to prepare them.

I also wrote for pet owners, animal lovers, and anyone who has ever sat across from a veterinarian and asked for guidance in a moment of crisis. I believe transparency fosters empathy. By offering an inside look at what veterinarians experience emotionally, ethically, and financially, I hope readers gain a deeper appreciation for the profession and the people in it.

Ultimately, this book is for anyone invested in the well-being of those who care for animals—whether you're in the profession or simply curious about it. And it's for those who love this field and want to make it better.

What kind of impact do you hope this book might have?

My greatest hope is that *A Compassionate Calling* helps veterinary professionals feel validated, understood, and empowered. Too often, those working in veterinary medicine believe they must hide their struggles to appear competent or strong. I want this book to lift that veil and invite readers into a more honest dialogue—one that acknowledges the emotional labor and systemic challenges we face, while also celebrating the deep fulfillment and meaning this work can bring.

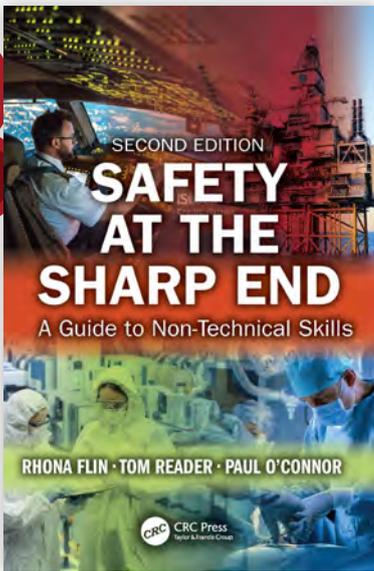
I hope it encourages veterinary professionals to seek support, set boundaries, and prioritize their well-being—not as a luxury, but as a necessity. I also hope it inspires veterinary educators, practice owners, and policymakers to consider how we can build a more sustainable profession—one where people can thrive long-term, not just survive day-to-day.

For aspiring veterinarians, I hope the book serves as a thoughtful companion. I want them to enter this career with eyes wide open, equipped with both practical insights and a strong sense of self-compassion.

And for the general public, I hope it fosters empathy. Despite nearly 90% of pet owners viewing their animals as family, many don't fully grasp the complexity of veterinary care or the toll it can take. If this book helps even a few people rethink their assumptions—or offer their veterinarian a little more kindness during a difficult visit—it will have done its job.

I also hope this book sparks broader conversations in other caregiving fields. So many of the issues we face in veterinary medicine—burnout, moral stress, compassion fatigue—are mirrored in human medicine and other caregiving professions. I believe this book can serve as a gateway to larger cultural discussions around mental health and the need for systemic change.

And finally, I hope it inspires action. That readers feel moved to support the many organizations advocating for mental health, diversity, and well-being in veterinary medicine. I've included a comprehensive list of such organizations at the end of the book—because while individual reflection is powerful, collective action is how we'll move this profession forward.



Safety at the Sharp End

A Guide to Non-Technical Skills, *2nd Edition*

Rhona Flin, Tom Reader and Paul O'Connor

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As modern industries become ever more sophisticated, the role of the human operators working on safety-critical tasks, i.e. at the 'sharp end' of the organisation, grows in importance. Their skills are essential for conducting operations, controlling systems, coping with disturbances and managing interactions. Humans are resourceful, resilient, innovative and smart. Tremendous advances have resulted from human creativity, perseverance and ingenuity. But humans can also make mistakes – a pilot forgetting to complete a step in a sequence, an engineer misunderstanding instructions, a nurse administering the wrong medication. This book looks at how to develop a skill set based on existing strengths while minimising the risks of inherent human limitations.

Safety at the Sharp End is about non-technical skills which are the cognitive, social, and personal resource skills that complement technical skills, and contribute to safe and efficient task performance. It has been written as a general guide to the underlying psychological concepts and practical applications. The first edition was published in 2008 and continues to be used globally across a wide range of different occupations, having been translated into other languages, including Japanese and Italian. This second edition has been fully revised in terms of recent scientific research, as well as current professional methods and tools. The three authors are academic psychologists (details below) who have been involved in a series of research and consultancy projects, over the last 30 years, to identify non-technical skills and to design related training and assessment tools with civil aviation, production and drilling in the oil and gas industry, maritime industry, nuclear power generation, military, finance, and in healthcare.

Training, and research, on non-technical skills started in the aviation industry. A series of major accidents, without primary technical cause, such as the crash between two jumbo jets on an airport runway in Tenerife (1977), forced investigators to consider other

factors. Psychologists and airline pilots worked together to identify the behaviours that could contribute to accidents. The aviation industry was fortunate to have one invaluable source of information, namely the cockpit voice recorders that had been built into modern jet aircraft. They revealed what the flight deck crew were saying in the minutes before and during these accidents. Analysis of these conversations suggested failures in leadership, poor team coordination, communication breakdowns, lack of assertiveness, inattention, and inadequate decision making. Once the aviation industry realised that maintaining high standards of safety required more than reliable technology and proficient technical skills, it started to focus on what they called the non-technical skills (NTS). Special training programmes were designed to teach these skills, known as Crew Resource Management (CRM). The potential of this approach was then recognised by other safety critical work sectors such as nuclear power generation, the rail and maritime industries, the emergency services, and healthcare. See box below for an example of a failure in situation awareness – a key non-technical skill in the maritime sector.

These sectors also began to consider the non-technical skills which their front-line staff required for safe and efficient performance, subsequently introducing training and assessment systems to ensure that levels of competence were reaching the required standard. Today all these sectors, and others, have introduced non-technical skills training and assessment and this book explains how this has been achieved.

The seven categories of non-technical skills discussed in this book are shown in the table below, along with the more specific elements for each skill. Each of these skills is covered in a separate chapter where the underlying psychological concepts are explained along with examples drawn from different industries to show how they are applied in practice.

Category	Elements
Situation Awareness	Gathering information
	Interpreting information
	Anticipating future states
Decision Making	Assessing the situation/Defining the problem
	Generating and considering one or more options
	Selecting and implementing an option
	Reviewing the outcome
Communication	Sending information clearly and concisely
	Including context and intent during information exchange
	Receiving information, especially by listening
	Identifying and addressing barriers to communication
Teamworking	Supporting others
	Solving conflicts
	Exchanging information
	Co-ordinating activities
Leadership	Using authority
	Maintaining standards
	Planning and prioritising
	Managing workload and resources
Managing Stress	Identifying symptoms of stress
	Recognising effects of stress
	Implementing coping strategies
Coping with Fatigue	Identifying symptoms of fatigue
	Recognising effects of fatigue
	Implementing coping strategies

The non-technical skills shown in the table provide a set of established constructs and a common vocabulary for learning about the important individual behaviours that influence safe and efficient task execution. These skills complement technical skills and knowledge as expert technical skills on their own do not always result in a good outcome. When non-technical skills are deficient, the risk of an error or accident increases. When they are developed and deployed effectively, the ability of people to manage hazardous environments and cope with unplanned events improves.

Additional chapters outline how the non-technical skills are identified, training and assessed, with material sourced from a range of work settings. The aim is to show how these skills are appropriate to many organisations. The final chapter considers future applications. Technological advances, such as AI) have great potential to improve organisational performance but

This book has been written primarily for use by professionals developing, delivering, or attending courses on non-technical skills, safety leadership, or human performance limitations. The material is also suitable for undergraduate and postgraduate students studying applied psychology, human factors, and industrial or patient safety.

KEY FEATURES:

- Non-technical skills are used by skilled practitioners to achieve consistently high and safe performance and what the rest of us do 'on a good day'.
- After starting in civil aviation, non-technical skills research, training and assessment are now common across a range of safety critical work domains.
- It is always important to consider the specific contexts and culture in which non-technical skills are applied.
- To improve and develop non-technical skills, there is a need to learn from what goes well, and not only from what goes wrong.



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Electric Vehicle Fluid Testing

Edited by Leonardo Israel Farfan Cabrera, Peter Lee, and Ali Erdemir



Electric Vehicle Fluid Testing

Edited by Leonardo Israel Farfan Cabrera, Peter Lee and Ali Erdemir

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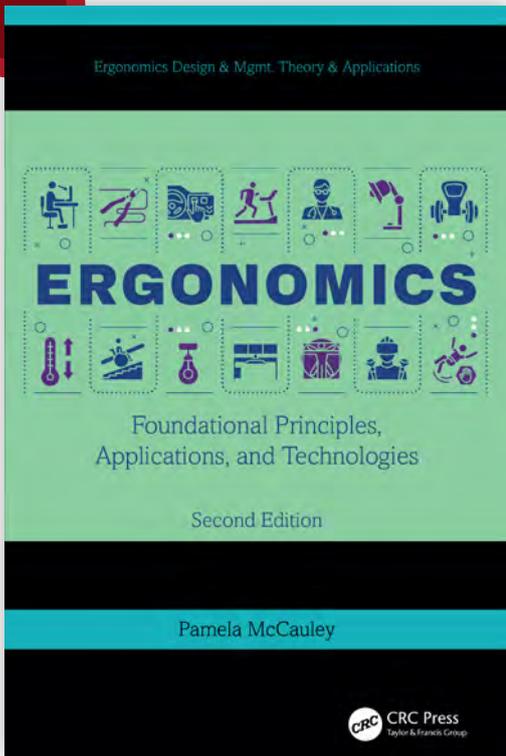
Ali Erdemir

is a University Distinguished Professor and Halliburton Chair at Texas A&M. He holds 37 U.S. patents and has authored over 300 articles. His award-winning research advances materials, coatings, and lubricants, especially for electric vehicles and other industrial applications.

This book presents the latest advancements, innovations, and discoveries in the testing and analysis of fluids for electric vehicle tribological applications. It covers all major aspects of fluid testing and evaluation, providing readers with essential information for enhancing the efficiency and durability of EV drivelines. Combining fundamental research with practical insights from leading global experts.

KEY FEATURES:

- Presents cutting-edge testing methodologies for EV driveline lubricants and coolants.
- Discusses the latest developments in electrified tribotesting for EV lubricants.
- Features real-world data from academic and industrial testing case studies.
- Includes previously unpublished results from electrified tribotesting and other physicochemical analyses of EV fluids conducted in academic and industrial settings.
- Offers a compendium of critical issues related to fluid-induced failures in EVs.
- By uniting contributions from pioneering industries and academic researchers, this book is an invaluable reference for engineers and scientists in tribology, lubrication, and automotive engineering, driving progress in rapidly evolving EV field.



Ergonomics

Foundational Principles, Applications,
and Technologies, *2nd Edition*

Pamela McCauley

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Dr. Pamela McCauley

is an internationally recognized Industrial Engineering researcher, Certified Professional Ergonomist (C.P.E.), and expert in human factors, biomechanics, and workplace safety. With over 30 years of experience in academia, industry, and expert witness testimony, she has advanced ergonomic principles across high-risk and industrial environments.

She has authored over 150 technical publications and the widely used textbook *Ergonomics: Foundational Principles, Applications, and Technologies*. Her research focuses on human-centered design, occupational biomechanics, and safety engineering.

A Fellow of both the Institute of Industrial and Systems Engineers and the American Institute for Medical and Biological Engineering, she is also a Black Engineer of the Year and Oklahoma Hall of Fame inductee. A passionate STEM advocate, she mentors future engineers and champions diversity, inclusion, and ergonomic innovation for safer, more inclusive work environments.

This newly updated edition presents a global perspective on ergonomics, addressing its application across occupational, recreational, design, and technological environments. This comprehensive textbook reflects the technological advancements that have reshaped the field, offering revised chapters, the integration of previously separate topics, and the addition of two entirely new chapters. With an emphasis on cultural sensitivity and inclusive representation, the book takes a modern approach to ergonomics with diversity at the heart of it.

Readers will find a complete and ready-to-use resource ideal for both instruction and independent study. The book features real-world examples, case studies, and innovative applications that help bridge theory and practice. Students and professionals will benefit from enhanced accessibility to global perspectives, a wide range of ergonomics software, and detailed guides for research and project development. It presents readers with the tools to understand, teach, and apply ergonomic principles effectively in both academic and practical settings.

Ergonomics, 2nd Edition is designed for a broad audience including researchers and students in human factors, industrial and organizational psychology, sociology, biomechanics, medicine, and design disciplines. It is also an essential resource for human resource professionals, industrial engineers, ergonomists, psychologists, HCI specialists, educators, and architects.

This textbook also contains ancillary materials including PowerPoint slides and a solutions manual for qualifying textbook adoptions.

Handbook of Design and Industry

Scenarios for Sustainable Futures



Edited by Maria João Félix, Rita Assoreira Almendra,
Fernando Moreira da Silva, Fátima Pombo,
and Paulo Jorge de Sousa Cruz

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Paulo Jorge de Sousa Cruz

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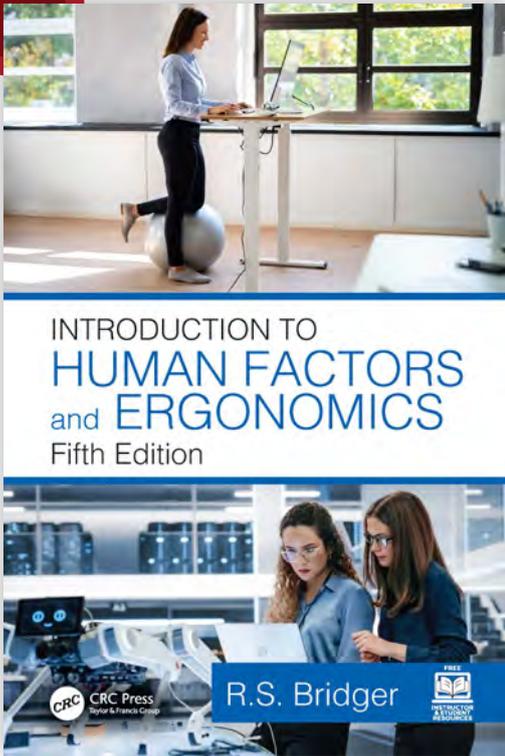
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The twenty-first century has been beset by a global pandemic, war and increasingly concerning environmental disasters. Designers and industries have been forced to imagine a world in which the only way to move forward is to look back. The design and industry sectors need to understand the role they can play in removing obstacles to social progress and work together to create healthier human societies that can interact with the world in a sustainable way.

This book presents contributions from leading experts that reveal that a better and more prosperous world is achievable through good work and system design. It consists of chapters that bring together researchers, academics, policy makers and designers from technology companies and business associations with the objective of developing a focused vision that enhances innovation through design and industry for a better future. Through a transdisciplinary scientific exchange, this title lists responses to the challenges of climate change and environmental degradation that will contribute to a more modern, resource efficient, competitive economy, with smart, sustainable and inclusive growth, promoting knowledge, inter-sector collaboration, health, education and a digital society for all. By putting the human at the heart of what can be accomplished, this book investigates better design in the disciplines of work, healthcare, product, system, manufacturing and industry. The reader will gather an interdisciplinary perspective on what good design can achieve and why it is needed to challenge the climate crisis.

The Handbook of Design and Industry: Scenarios for Sustainable Futures is essential reading for researchers and academics in the fields and disciplines of ergonomics/human factors, occupational health and safety, industrial design, product design, industrial engineering, materials engineering, process engineering, computer engineering, communication designers, electronics and telecommunications engineering.



Introduction to Human Factors and Ergonomics

5th Edition

R.S. Bridger

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Dr. R.S. Bridger

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Ergonomics and human factors impact how humans interact with the world around them. Understanding these factors can be difficult. To cut through the tricky aspects of the subject, this bestselling textbook offers a comprehensive and up-to-date introduction to the field. This title places the subject matter into a system context using a human-machine model to structure the chapters and a knowledge application model to structure the organisation of material in each chapter.

Every chapter covers Core Concepts, Basic Applications, Tools and Processes, and System Integration issues regardless of topic. This updated fifth edition provides new material on current occupational health issues such as obesity, menopause, and other modern work-related medical concerns. Updated to include coverage of new technological developments such as self-driving cars, exoskeletons, AI, hybrid working and cell phone ergonomics. Examples where tools are used including the Strain Index and the Lifting Fatigue Failure Tool have been fully updated, featuring signposting to additional resources and toolkits. Readers will grasp a full and thorough grounding in the need-to-knows of ergonomics and human factors.

Introduction to Human Factors and Ergonomics 5th Edition is the premier textbook for any student where ergonomics and human factors play a part in their discipline, including those in aviation, medicine and healthcare, energy, engineering, health and safety and the sciences.

Also included in this updated new edition are an instructor's manual and a guide to tutorials and seminars. Over 500 PowerPoint slides are available for academic use from the publisher.

LAB-AT-HOME EXPERIMENTS IN CHEMISTRY AND CHEMICAL ENGINEERING

JUDE A. OKOLIE AND UGOCHUKWU PATRICK OKOYE
with contributions by Maya Fetzer



Lab-At-Home Experiments in Chemistry and Chemical Engineering

Jude A. Okolie and Ugochukwu Patrick Okoye

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With the rise of remote and hybrid learning, there is an increasing need for flexibility around laboratory-based coursework. This book offers readers a guide to conducting a wide variety of Chemistry and Chemical Engineering labs and experimental procedures that can be completed easily and safely outside of a traditional lab setting, including at home. It helps students and interested readers achieve hands-on learning of chemistry- and chemical engineering-based concepts without the need for sophisticated lab equipment.

KEY FEATURES:

- A comprehensive range of labs on such topics as separation processes, CO₂ capture, process simulation and modeling, 3D printing, reaction kinetics, fuel cells, and catalysis.
- Includes detailed information on how to perform experiments at home via detailed virtual experimental procedures and accompanying videos.
- Most can be performed with household and readily accessible materials and provides safe material handling and disposal methods.
- Offers solution spreadsheets where experimental results can be computed and validated.
- Gives background information and relevant theory about each experiment and exercises at the end of each chapter.
- Provides MATLAB code and instructions on how to perform process optimization and design of experiments.

This practical and useful guide is aimed at chemistry and chemical engineering students, as well as general readers interested in running experiments in these disciplines.

Video supplements to support comprehension of each lab and a solutions spreadsheet for chapter 1 are available for download.

Mixing Process Technology

A Guide to Industrial Applications



Kishore Kar • Richard Cope • Juergen Lueske

Mixing Process Technology

A Guide to Industrial Applications

Kishore Kar, Richard Cope and Juergen Lueske

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Richard Cope

holds a PhD in chemical engineering and has over 25 years in chemical and biopharma R&D. He designed a mixing experiment for the ISS, holds seven patents, authored 19 publications, and received the 2020 NAMF Mixing Award. He works at SPX FLOW.

Juergen Lueske

spent 35 years at Dow Chemical, specializing in process development, simulation, and gas-liquid contactor modeling, particularly fermenters and bioreactors. He co-authored multiple papers and encyclopedia chapters and holds an MS in mechanical and process engineering from Leibniz University of Hannover, Germany.

Industrial mixing processes often present multiple optimization challenges to producing desirable products. The resulting processes must be cost effective, "first-time right," and frequently, the designated most-effective technology for the global manufacture of specific products. *Mixing Process Technology: A Guide to Industrial Applications* shares the authors' extensive knowledge of mixing research and industrial practice. It features 20 industrial mixing chapters that are purposely light on mixing fundamentals, while heavy on practical mixing applications for practical process design and manufacturing. This text serves as an applied guide to industrial mixing for practitioners who want brief explanations of mixing concepts with real-life examples and software to help perform associated design calculations.

KEY FEATURES:

- Offers side-by-side discussion of mixing systems including impellers and rotor-stators, as offered by several major manufacturers
- Describes the authors' innovative mixer designs to meet manufacturing needs.
- multiple practical examples by a contributing author from a leading pharmaceutical company.
- Includes Excel-based mixing worksheets throughout book examples and Excel-based input/output (mixit-io) interface hosted on the publisher's website.
- This book is aimed at chemical and process engineers as well as students seeking to understand industrial mixing technology.

Process Design, Economics, and Project Engineering

Wayne Seames



Process Design, Economics, and Project Engineering

Wayne Seames

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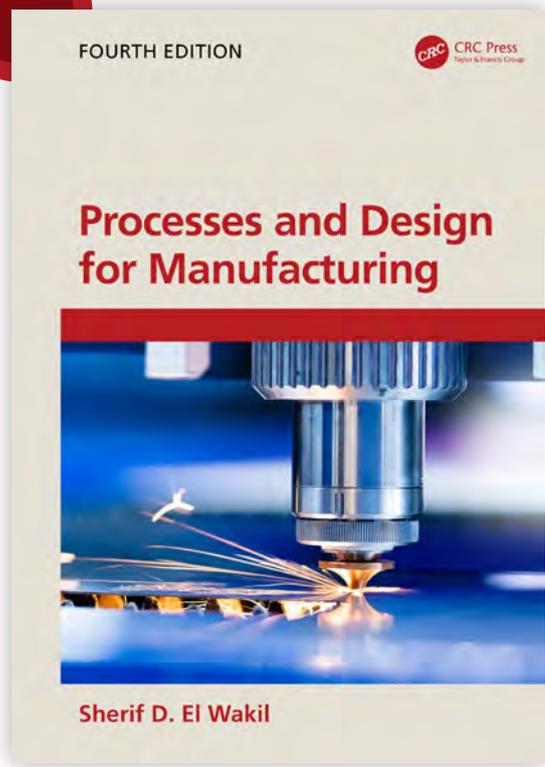
Since joining academia, Seames has led over 100 research projects and published extensively, including five papers on the design and economics of emerging process technologies. He holds eight U.S. patents and was named a Fellow of the National Academy of Inventors in 2017.

His teaching has earned numerous honors, including the UND Foundation/Lydia and Arthur Saiki Faculty Award for Excellence in Teaching (2018), the Faculty Scholar Award (2013), and UND's Professor of the Year (2006). In 2011, he was named a Chester Fritz Distinguished Professor, the university's highest faculty honor, recognizing his sustained excellence in teaching, research, and service.

The principal goal of this textbook is to prepare process/chemical engineers for careers in a wide variety of process-related jobs. The book will also serve as reference resource for engineers working in the process and process design industries. The book assumes prerequisite knowledge of material and energy balances, heat transfer, fluid flow, and mass transfer but does not require any prerequisite knowledge of economics, process control, process safety, or material selection. It is uniquely organized to follow the project life cycle that is most commonly used by engineering contractors and the operating companies they serve in the process industries.

KEY FEATURES:

- Covers both retrofit and new process projects.
- Includes a set of easy to use, step-by-step preliminary equipment sizing methods.
- Offers realistic rules of thumb for equipment sizing and pressure profiles.
- Discusses professional development topics such as time management, planning and scheduling, working in teams, leadership, conflict resolution, technical writing, effective meetings, and oral communications.
- Addresses safety and sustainability considerations for process design.
- Includes a unified suite of cost estimating methods for simple retrofits, major retrofits, and grassroots projects.
- Covers process/project economics and how to evaluate process opportunities
- Includes information on plant layout, auxiliary systems, and process automation.
- Features homework problems and examples, case study example reports, vision drawing image templates, and Excel workbooks with example calculations for economic analysis.



Processes and Design for Manufacturing

4th Edition

Sherif D. El Wakil

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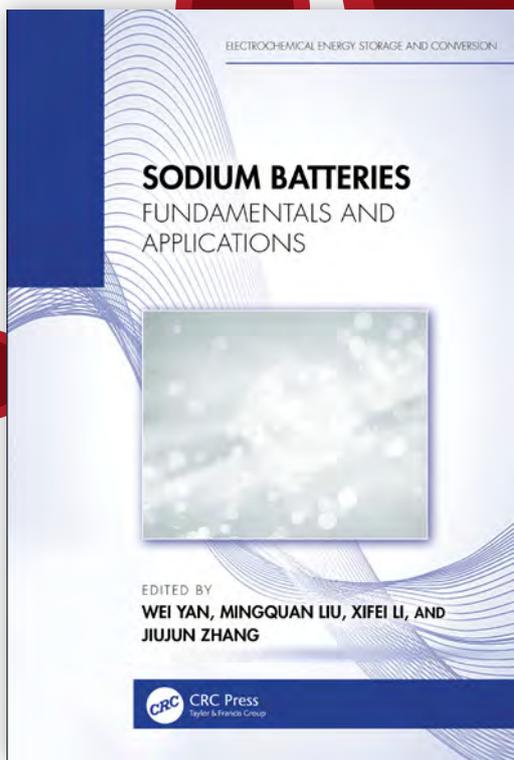
Sherif D. El Wakil

currently holds the position of adjunct professor of Mechanical Engineering at the University of Massachusetts Lowell. Additionally, he is an Emeritus Professor of Mechanical Engineering at the University of Massachusetts Dartmouth, where he previously held the distinguished rank of Chancellor Professor of Mechanical Engineering. Throughout his esteemed career, he has assumed various administrative roles, including Dean, Chairman of the Academic Council of the College of Engineering, and Chairman of the Mechanical Engineering Department. Dr. El Wakil is actively engaged as a consultant specializing in product failure analysis and product design assessment, often providing technical expertise as a witness in legal proceedings.

Processes and Design for Manufacturing 4th Edition, offers a comprehensive and detailed examination of modern manufacturing processes while also delving into the concept of design for manufacturing (DFM) and its application across diverse manufacturing techniques. It examines manufacturing processes from the viewpoint of the product designer, investigating the selection of manufacturing methods in the early phases of design and how this affects the constructional features of a product. The stages from design process to product development are examined, integrating an evaluation of cost factors.

The text emphasizes both a general design orientation and a systems approach and covers topics such as additive manufacturing, concurrent engineering, polymeric and composite materials, cost estimation, design for assembly, and environmental factors. This edition has new and updated chapters, including a detailed chapter focusing on the prominent topic of microchip manufacturing.

This book is essential reading for senior undergraduate students studying manufacturing processes, product design, design for manufacture, and computer-aided manufacturing.



Sodium Batteries

Fundamentals and Applications

Edited by Wei Yan, Mingquan Liu, Xifei Li and Jiujun Zhang

November 2025

ISBN 9781032713076

312 Pages, 131 B/W Illustrations

Subject: Chemical Engineering

www.routledge.com/9781032713076



Wei Yan

is Professor and Executive Dean at Fuzhou University. A Fellow of the Royal Society of Chemistry, his research focuses on materials for electrochemical energy storage and conversion.



Mingquan Liu

is Assistant Professor at Fuzhou University. His research centers on materials engineering and interfacial chemistry for sodium and zinc-ion batteries.



Xifei Li

is Professor and Executive Dean at Xi'an University of Technology, specializing in electrochemical energy storage. He holds leadership roles in multiple national and international research organizations.



Jiujun Zhang

is Professor and Dean at Fuzhou University. A Fellow of several prestigious academies, he specializes in electrochemical energy science and was formerly with Canada's National Research Council.

Although lithium-ion batteries (LIBs) are the dominant technology used in portable electronics, electric vehicles, and stationary power stations, there is concern about the long-term availability and sustainability of lithium to meet demand. Sodium batteries (SBs) are seen a viable alternative, as sodium is abundant, and because the battery components and electrical chemistry of SBs and LIBs are similar, SBs are poised to take advantage of the existing infrastructure and mature manufacturing technologies of LIBs and can serve as a drop-in technology. This book provides an in-depth overview of fundamentals, advanced materials, characterization, functional mechanisms, technologies, and applications of SBs. It introduces a wide range of SBs and discusses how to improve their performance and extend their lifecycle for commercial use.

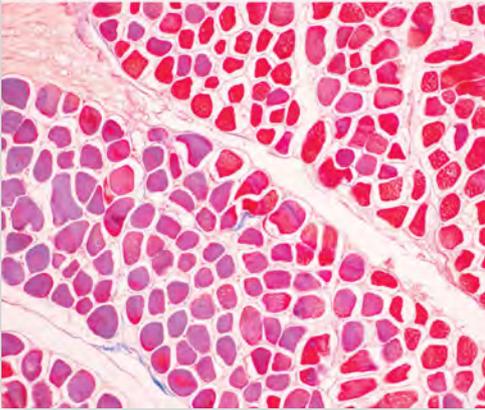
KEY FEATURES:

- Examines material design, selection, synthesis, structural and property characterization, and related issues.
- Details advanced characterization technologies including artificial intelligence and theoretical calculations applied in these batteries.
- Analyzes advances in the electrochemical energy storage and conversion of various SBs to keep up with rapidly changing commercial requirements.
- Discusses safety of use in grid energy storage and conversion and electric vehicles.
- Provides strategies for increasing performance, assembling, and fabrication toward commercialization.
- Summarizes achievements, challenges, and future research directions.

Aimed at chemical, materials, and energy engineers, researchers, and advanced students, this book serves as a valuable resource to assist in the development and commercial application of sodium batteries.

The Mechanics of Biological Materials

Manuel Elices, Gustavo Guinea, and John Morton



The Mechanics of Biological Materials

Manuel Elices, Gustavo Guinea and John Morton

July 2025
ISBN 9781032892771
386 Pages, 247 B/W Illustrations
Subject: Materials Science
www.routledge.com/9781032892771



Manuel Elices

is a Foreign Member of the National Academy of Engineering, USA, Member of the Royal Spanish Academy of Sciences, Member of the Royal Spanish Academy of Engineering, and Emeritus Professor of Materials Science at the Polytechnical University of Madrid, Spain.



Gustavo Guinea

is a Corresponding Member of the Royal Spanish Academy of Sciences, Professor of Materials Science, former Director of the Centre for Biomedical Technology at the Polytechnic University of Madrid, Spain, and Head of the Laboratory for Biomaterials and Regenerative Engineering at this Centre.



John Morton

is a Fellow in Engineering Science at University College Oxford, UK.

This book introduces the mechanical principles governing the behaviour of a wide range of biological materials, which are materials produced by a biological system. The approach is systematic and based on one-dimensional (fibres), two-dimensional (membrane), and three-dimensional (bulk) biological materials. The essential mathematical tools are developed from first principles and applied to materials as diverse as spider silk, blood vessels, and bone. It offers a progressive introduction of mathematics and mechanics concepts and offers detailed solutions to numerous worked examples.

KEY FEATURES:

- Provides an essential gateway to access complex treatises in the important and demanding models governing the observed behaviour of biological materials
- Teaches readers to exploit the wondrous properties found in nature in the development of biomimetic applications
- Offers a progressive introduction of mathematics and mechanics concepts
- Includes detailed solutions to numerous worked examples, case studies, and homework problems
- The text is aimed at students of chemistry, materials engineering, and biology, who do not have a background in mechanics but wish to further their knowledge of the mechanics of biological materials.

A solutions manual is available to qualifying adopting professors.

Dynamics of Democratic Elections

Johannes Müller, Volker Hösel, Aurélien Tellier, and Christoph Mohamad-Klotzbach



Dynamics of Democratic Elections

Johannes Müller, Volker Hösel, Aurélien Tellier and Christoph Mohamad-Klotzbach

November 2025
ISBN 9781032799124
432 Pages, 87 Color Illustrations
Subject: Mathematics & Statistics / Probability
www.routledge.com/9781032799124



Johannes Müller

is Associate Professor of Mathematics at TUM. His research connects mathematics with biology and social sciences, focusing on dynamical systems, epidemiology, quorum sensing, and opinion dynamics.



Volker Hösel

is a mathematician specializing in applied statistics, bioinformatics, and functional analysis. He studied in Erlangen and Munich, and has taught extensively at the Technical University of Munich.



Aurélien Tellier

is Associate Professor of Population Genetics at TUM. He develops theoretical models to study plant-parasite coevolution, seed dormancy, and ecological adaptation through an evolutionary genetics lens.



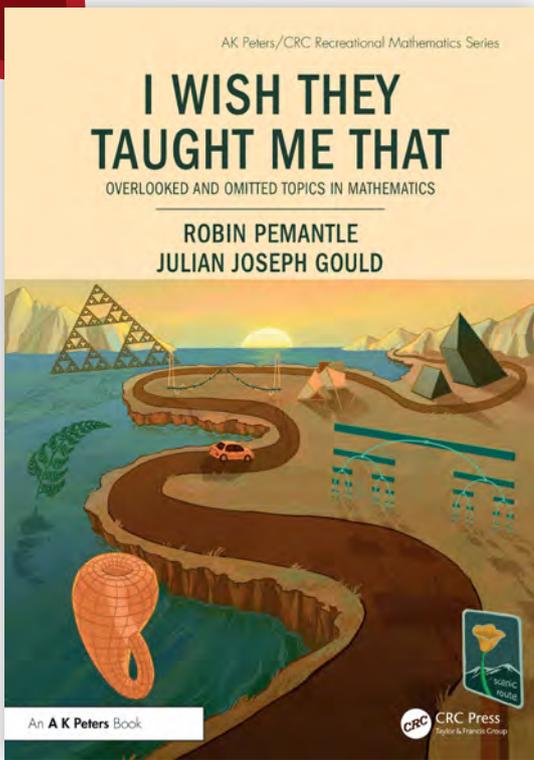
Christoph Mohamad-Klotzbach

is a Postdoctoral Researcher in Comparative Politics at the University of Würzburg. His work focuses on democracy studies, political culture, stateness, voting behavior, and political party systems.

Dynamics of Democratic Elections explores modeling approaches to democratic elections and opinion dynamics at the intersection of mathematics, political science, and computational modeling. The book focuses on relatively simple models, their analysis, and how they perform in real-world applications. In order to make the book easy to navigate, the material is divided into three major parts concerning 'The Voter Model', 'Nonlinear Election Models', and 'Game Theoretical Models'. Although the material is unashamedly mathematical, the concepts are discussed in a way that should be accessible to anyone with a reasonably strong quantitative background and should prove interesting to a broad audience beyond mathematicians.

KEY FEATURES:

- Suitable for graduate students and researchers (mathematicians, physicists, social and political scientists with a strong theoretical background)
- Step-by-step data preparation and analysis
- Abundant exercises
- Numerous color illustrations.



I Wish They'd Taught Me That

Overlooked and Omitted Topics
in Mathematics

Robin Pemantle and Julian Joseph Gould

November 2025
ISBN 9781032870342
392 Pages, 72 Color Illustrations
Subject: Mathematical Analysis
www.routledge.com/9781032870342



Robin Pemantle

is a professor at the University of Pennsylvania specializing in probability theory and analytic combinatorics. He earned his PhD in 1988, held fellowships at top institutions, and has received numerous honors, including election to the National Academy of Sciences. A lifelong advocate for math education, Robin has co-authored several books, most recently *There Is No One Way to Teach Math* (2024). He grew up in Berkeley and began doing math before kindergarten.



Julian Gould

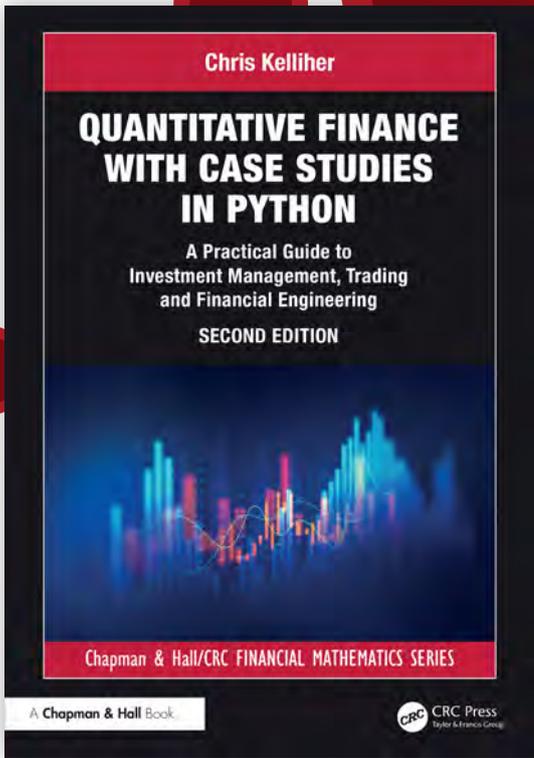
is a PhD candidate in mathematics at the University of Pennsylvania, focusing on applied algebraic topology and cellular sheaf theory. He holds degrees from Johns Hopkins and previously worked in finance. A dedicated educator, he received Penn's Dean's Award for Distinguished Teaching and mentors undergraduates in advanced math topics. Julian enjoys writing on philosophy, trading on prediction markets, and lifting weights. His collaboration with Robin began while TA'ing calculus for Wharton students.

I Wish They'd Taught Me That: Overlooked and Omitted Topics in Mathematics concerns the topics which every undergraduate mathematics student "should" know but has probably never encountered. These topics are not the ones which dominate every syllabus syllabus, but those magnificent secrets that are beautiful, useful and accessible but which are inexplicably hidden away from the mainstream curriculum.

Each chapter of this book concerns a different topic which students will almost certainly be unfamiliar with. Written in a lively, conversational style, by the end of each section the reader should feel equipped with the knowledge to explore the area more fully elsewhere.

KEY FEATURES:

- Topics from a variety of areas of mathematics, including geometry, logic, analysis, algebra, numerical analysis, and topology
- Numerous examples, diagrams, and exercises
- Collections of resources where an interested reader can learn more about each topic.



Quantitative Finance with Case Studies in Python

A Practical Guide to Investment Management, Trading and Financial Engineering, *2nd Edition*

Chris Kelliher

November 2025
ISBN 9781032868004
792 Pages
Subject: financial Mathematics
www.routledge.com/9781032868004



Chris Kelliher

is a multi-asset portfolio manager and senior quantitative researcher with over 20 years of investment experience at asset management firms and hedge funds. In addition, Mr. Kelliher is an adjunct professor in the Master's in Mathematical Finance and Financial Technology program at Boston University's Questrom School of Business where he has also held the role of Executive Director. In these roles, he has taught graduate-level courses on computational methods in finance, fixed income, credit risk and programming for quant finance. He is also the author of *Quantitative Finance with Python: A Practical Guide to Investment Management, Trading and Financial Engineering* and was named among the top 20 US Finance Professors in 2024 by Rebellion Research. Mr. Kelliher earned a BA in economics from Gordon College, where he graduated Cum Laude with departmental honours and an MS in mathematical finance from New York University's Courant Institute.

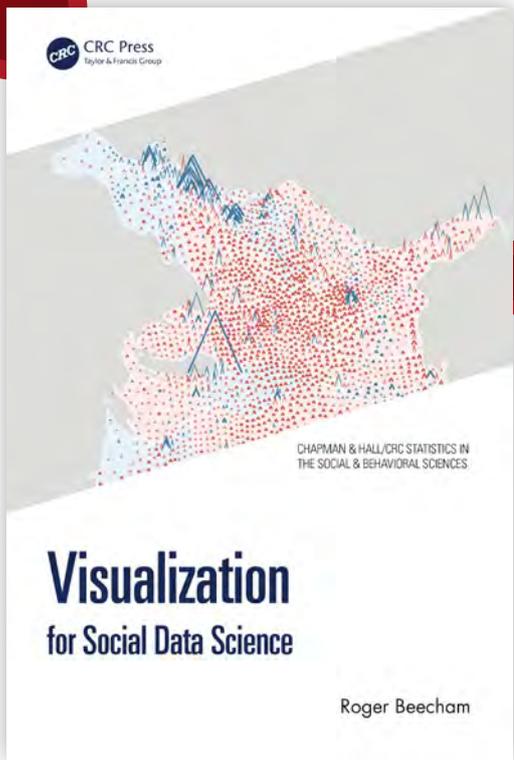
Quantitative Finance with Case Studies in Python: A Practical Guide to Investment Management, Trading and Financial Engineering bridges the gap between the theory of mathematical finance and the practical applications of these concepts for derivative pricing and portfolio management. The book provides students with a very hands-on, rigorous introduction to foundational topics in quant finance, such as options pricing, portfolio optimization and machine learning. Simultaneously, the reader benefits from a strong emphasis on the practical applications of these concepts for institutional investors

This new edition includes brand new material on data science and AI concepts, including large language models, as well as updated content to reflect the transition from Libor to SOFR to bring the text right up to date. It also includes expanded material on inflation, mortgage-backed securities and counterparty risk. In addition, there is an increased emphasis on trade ideas, as well as examples throughout based on recent market dynamics, including the post-Covid inflation shock.

Overall, the new edition is designed to be even more of a practical tool than the first edition, and more firmly rooted in real-world data, applications, and examples

KEY FEATURES:

- Useful as both a teaching resource and as a practical tool for professional investor
- Ideal textbook for first year graduate students in quantitative finance programs, such as those in master's programs in Mathematical Finance, Quant Finance or Financial Engineering
- Includes a perspective on the future of quant finance techniques, and in particular covers concepts of Machine Learning and Artificial Intelligence



Visualization for Social Data Science

Roger Beecham

August 2025
ISBN 9781032259710
216 Pages, 74 Color & 6 B/W Illustrations
Subject: Mathematics & Statistics / Data Science
www.routledge.com/9781032259710



Roger Beecham

is Associate Professor of Visual Data Science at University of Leeds School of Geography and Director of Research & Innovation at Leeds Institute for Data Analytics. He has published award-winning methodological work in data visualization, statistical practice and applied social science. He has taught visual data analysis for many years – to undergraduate and postgraduate students, experienced academics and data analysis professionals.

Visualization for Social Data Science provides end-to-end skills in visual data analysis. The book demonstrates how data graphics and modern statistics can be used in tandem to process, explore, model and communicate data-driven social science. It is packed with detailed data analysis examples, pushing you to do visual data analysis. As well as introducing, and demonstrating with code, a wide range of data visualizations for exploring patterns in data, *Visualization for Social Data Science* shows how models can be integrated with graphics to emphasise important structure and de-emphasise spurious structure and the role of data graphics in scientific communication – in building trust and integrity. Many of the book's influences are from data journalism, as well as information visualization and cartography.

Each chapter introduces statistical and graphical ideas for analysis, underpinned by real social science datasets. Those ideas are then implemented via principled, step-by-step, workflows in the programming environment R.

KEY FEATURES

- Extensive real-world data sets and data analysis scenarios in Geography, Public Health, Transportation, Political Science
- Code examples fully-integrated into main text, with code that builds in complexity and sophistication
- Quarto template files for each chapter to support literate programming practices
- Functional programming examples, using tidyverse, for generating empirical statistics (bootstrap resamples, permutation tests) and working programmatically over model outputs
- Chapters on uncertainty visualization and data storytelling that are uniquely accompanied with detailed, worked examples.

A Manual of Neonatal Intensive Care

Sixth Edition

Edited by Janet M Rennie
and Giles S Kendall



 CRC Press
Taylor & Francis Group

A Manual of Neonatal Intensive Care

6th Edition

Edited by Janet M. Rennie and Giles S. Kendall

October 2025
ISBN 9781032515915
374 Pages, 30 Color & 40 B/W Illustrations
Subject: Emergency Medicine

www.routledge.com/9781032515915

Janet M. Rennie

MA, MD, FRCP, FRCPC, DCH, FRCOG, Honorary Consultant in Neonatal Medicine, University College London Hospitals; Consultant and Senior Lecturer in Neonatal Medicine, Elizabeth Garrett Anderson Obstetric Hospital, University College London Hospitals, UK.

Giles S. Kendall

FRCPC, PhD, Consultant in Neonatal Medicine and Honorary Associate Professor, Institute for Women's Health, University College London, UK.

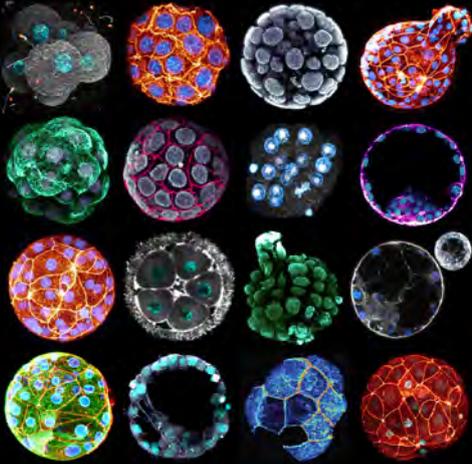
The 6th Edition of this successful and well-regarded book is a useful ready-reference for the practicing pediatrician and nurse and gives invaluable guidance for trainees in pediatrics, neonatology, and neonatal nursing. It provides those working in neonatal intensive care units with precise instructions on the diagnosis and management of common neonatal problems; it has been extensively updated and revised, with emphasis on concision in the background physiology, key references, and explanatory diagrams.

5th edition received Highly Commended, BMA Medical Book Awards 2014

EDITED BY NICOLAS PLACHTA AND STEPHANIE BISSIERE

ATLAS OF HUMAN EMBRYO DEVELOPMENT

Advances with New Imaging Technologies



CRC Press
Taylor & Francis Group

Atlas of Human Embryo Development

Advances with New Imaging Technologies
Nicolas Plachta and Stephanie Bissiere

August 2025
ISBN 9781032751474
120 Pages, 50 Color & 3 B/W Illustrations
Subject: Anatomy

www.routledge.com/9781032751474

Nicolas D. Plachta

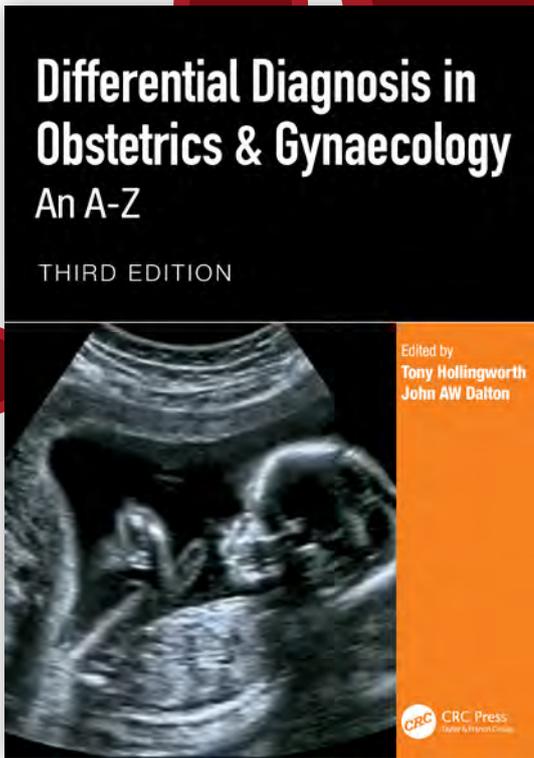
Ph.D. is the William Richard Gordon President's Distinguished Professor in Genetics and Scientific Director, Cell and Developmental Biology Microscopy Core, at the Smilow Center for Translational Research at the Perelman School of Medicine at the University of Pennsylvania.

Stephanie Bissiere

Ph.D., is a senior scientist at UPenn, specializing in early mammalian development, reproduction, and neurophysiology across leading global institutions.

This important and exciting atlas shows with unprecedented resolution the development of the human embryo from fertilization to the end of pre-implantation development. Technology can now capture dynamic changes at the subcellular level that drive embryogenesis and development, allowing the whole team in reproductive medicine to move on from traditional imaging of fixed specimens or classic light microscopy to seeing, as if in 3D and real time, the process of fertilization and development of the human embryo – and of developmental defects.

The human embryo research documented here will be of paramount importance for reproductive health, offering the chance to advance fertility treatments, genetic disease prevention, and our understanding of early human development.



Differential Diagnosis in Obstetrics & Gynaecology

An A-Z, *3rd Edition*

Edited by Tony Hollingworth and John A.W. Dalton

October 2025
ISBN 9781032740393
456 Pages, 165 Color & 24 B/W Illustrations
Subject: Gynecologic Oncology
www.routledge.com/9781032740393

• Tony Hollingworth

MB ChB, MSt, MSc, MBA, PhD, FRCS(Ed), FRCOG. Retired Consultant in Obstetrics and Gynaecology, Barts Health/Whipps Cross University Hospital, London, UK.

• John A.W. Dalton

MA, MBBS, MEd, MRCOG, DFSRH, FHEA. Consultant in Obstetrics and Gynaecology, Leeds Teaching Hospitals NHS Trust; Honorary Senior Lecturer, Leeds Institute of Medical Education, University of Leeds, UK.

One of the major challenges in obstetrics and gynaecology is the need for a broad knowledge of medicine and surgery as well as specific conditions related to reproduction. This revised and updated edition provides clinicians with invaluable assistance in the diagnostic process to differentiate quickly and correctly among various diseases and disorders presenting in the female patient. From minor to major symptoms, the differential diagnoses are explored and offered in a way that is easy to read and leads to practical management.

Arranged alphabetically and based on presenting symptoms, the text provides readers with a step-by-step approach to provide associated differential diagnoses. Algorithms, references and websites have been included where appropriate. The layout is engaging, with excellent illustrations and useful boxes highlighting important points. There is also a glossary of common terms and terminology used in obstetrics and gynaecology at the end.



Interactive Cases in Emergency Medicine

Learning Through Image Interpretation
Edited by Alice Yearwood and Dipak Mistry

September 2025
ISBN 9781032479842
332 Pages, 42 Color & 59 B/W Illustrations
Subject: Emergency Medicine
www.routledge.com/9781032479842



Alice Yearwood

is an Anaesthetic Trainee, London, UK.



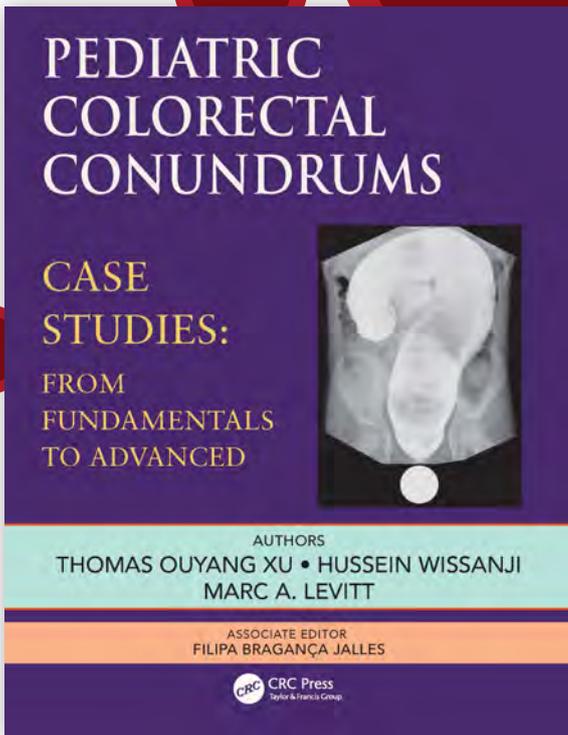
Dipak Mistry

is Education Lead for Emergency Medicine at University College London Hospitals NHS Foundation Trust.

This innovative book is based on real patients seen in the emergency department of a busy London teaching hospital. Developed from a project designed to offer an online alternative to in person learning during the COVID-19 pandemic, the material will appeal to readers and educators seeking digital content to supplement traditional print-based learning resources. Sixty-five high-yield cases are illustrated with a variety of static images, including clinical photographs, x-rays and scans, blood films and ECG traces, coupled with integrated imaging videos to enhance understanding. Knowledge is tested via best of five questions, reflecting the format of qualifying examinations, while extensive answers provide further opportunities for learning and revision.

KEY FEATURES:

- Challenging real life cases coupled with imaging videos as well as static images, optimized for mobile viewing
- Scenarios that appeal to both the novice and experienced doctor in the ED and allied specialties
- Comprehensive coverage across a range of speciality areas reflecting the case-load of acute and emergency hospital settings through which doctors in training rotate
- Meets increasing expectations that non-radiologists are required to interpret and act upon imaging results
- Ideal as a revision aid for those in preparation for FRCEM and equivalent international examinations in emergency medicine
- Reflecting both common and more complex clinical scenarios, the content will teach and challenge its readers, from the newly qualified junior doctor to more experienced clinicians and allied health personnel working in emergency and acute settings.



Pediatric Colorectal Conundrums

Case Studies:
From Fundamental to Advanced
Marc Levitt, Thomas Xu and Hussein Wissanji

November 2025
ISBN 9781032780368
190 Pages, 163 Color & 150 B/W Illustrations
Subject: Pediatric Surgery
www.routledge.com/9781032780368

Marc A. Levitt

is Chief of Colorectal & Pelvic Reconstruction at Children's National Hospital. He has performed over 15,000 pediatric colorectal procedures, authored six textbooks, and founded Colorectal Team Overseas to improve global care access. He also teaches and develops multidisciplinary centers worldwide.

Hussein Wissanji

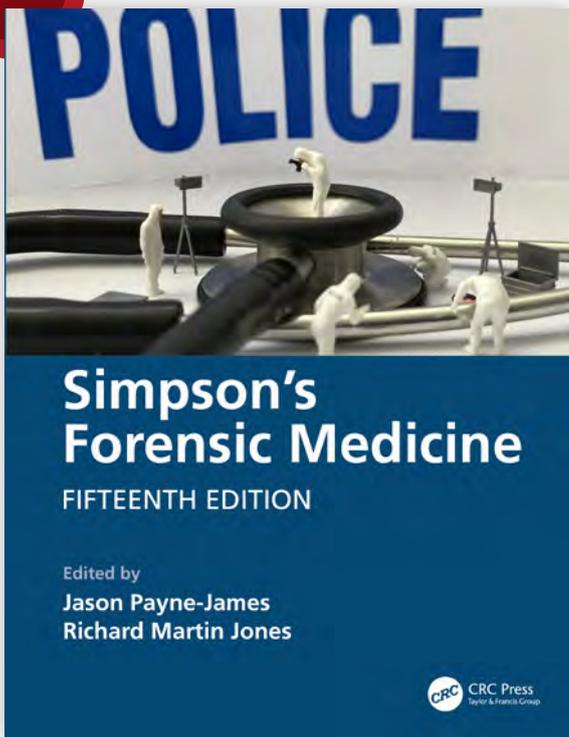
is a pediatric colorectal surgeon at Montreal Children's Hospital and McGill professor. He founded COCOE, a leading Canadian center for children with colorectal conditions, after training with Dr. Levitt. His work integrates clinical care, research, and education for patients and healthcare providers.

Thomas Xu

is a general surgery resident at Beth Israel Deaconess and former Pediatric Colorectal Surgery Research Fellow under Dr. Levitt. A dedicated educator and researcher, he's passionate about pediatric surgery and enjoys cooking, sports, and outdoor activities like skiing, hiking, and rock climbing.

Incorporating a two tier approach, this is new approach to learning the skills to become a high-performing pediatric colorectal surgeon. The first part of the books covers the essential knowledge required, and using a case based approach educates the reader in the key elements of differential diagnosis, history and and physical examination, pathophysiology, workup, management, and complications. For surgeons who wish to deepen their knowledge, the second part of the book covers in detail the specifics of a wide repertoire of cases, including highly complex procedures.

Fully supported with access to self assessment quizzes, and including links to online resources, this contemporary approach to educating pediatric colorectal surgeons provides a valuable resource to for pediatric surgeons around the world.



Simpson's Forensic Medicine

15th Edition

Edited by Jason Payne-James and
Richard Martin Jones

September 2025
ISBN 9781032424347
426 Pages, 394 Color & 28 B/W Illustrations
Subject: Forensic Science
www.routledge.com/9781032424347

Professor Jason Payne-James

is a forensic physician and Honorary Clinical Professor at Queen Mary University of London. He is President of the European Council of Legal & Forensic Medicine and Lead Medical Examiner in Norwich.

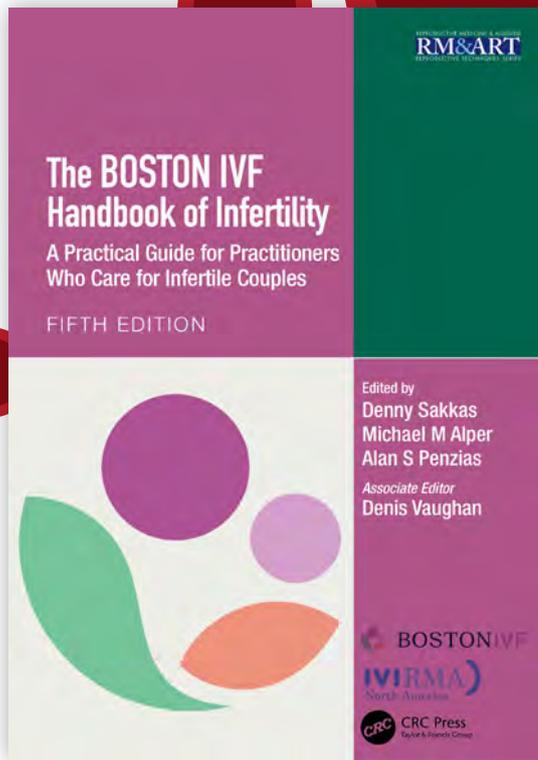
Richard Jones

is a Clinical Senior Lecturer in Forensic Pathology at Cardiff University and a Home Office-registered forensic pathologist. He also serves as Honorary Consultant Forensic Pathologist for Cardiff and Vale University Health Board.

The 15th Edition of *Simpson's Forensic Medicine* provides an overview of all that is relevant in practice at the interface between medicine and law. Its long-standing reputation as one of the world's leading introductory texts in the field of forensic & legal medicine is reflected by easy to read and informative text, complemented by numerous colour images, tables and figures.

Identifying current forensic & legal medicine practice, the comprehensive coverage encompasses all aspects of forensic pathology, clinical forensic medicine, legal medicine and highlights contemporary topic such as non-fatal strangulation, deaths in custody, safeguarding, intimate-partner violence as well as subjects such as asphyxial deaths, the impact of heat, cold & electrical trauma, and immersion and drowning.

Forensic & legal medicine is intimately involved with the criminal and civil justice systems including family law. Forensic & legal medicine and forensic science are closely linked and for all those whose work brings them into contact with such subjects, Simpson's provides an immediate source of accessible knowledge. Students and practitioners in such settings can understand how their area of work or study interrelates and interacts with others in different settings. Simpson's is, therefore, a textbook of choice for those studying forensic & legal medicine or forensic science, and for forensic practitioners, law students, law enforcement personnel, healthcare professionals, and judges, coroners and other legal professionals.



The Boston IVF Handbook of Infertility

A Practical Guide for Practitioners Who Care for Infertile Couples, *5th Edition*

Edited by Michael M. Alper, Denny Sakkas, Denis Vaughan and Alan S. Penzias

October 2025
ISBN 9781032607030
280 Pages, 18 Color & 31 B/W Illustrations
Subject: Reproductive Medicine
www.routledge.com/9781032607030

Denis Vaughan

MD, FACOG, MRCPI is a board-certified Reproductive Endocrinologist and Director of Clinical Research at Boston IVF and a Clinical Instructor at Harvard Medical School.

Denny Sakkas

PhD is Director of Clinical Research at Boston IVF and Associate Professor at the Department of Obstetrics, Gynecology and Reproductive Sciences at Yale University School of Medicine.

Michael M. Alper

MD is Medical Director and a Reproductive Endocrinologist at Boston IVF and Associate Clinical Professor at Harvard Medical School.

Alan S. Penzias

MD is Surgical Director and Reproductive Endocrinologist at Boston IVF and Director of the fellowship program in Reproductive Endocrinology and Infertility at Beth Israel Deaconess Medical Center/Harvard Medical School and Associate Professor of Obstetrics, Gynecology and Reproductive Biology at Harvard Medical School.

This new edition of an established go-to reference provides a structured approach to treating the infertile couple that will be of benefit to the gynecologist, reproductive endocrinologist, and reproductive medicine nurse alike. Both clinical and laboratory techniques are included, with material on preconception care and office management.

KEY FEATURES:

- Provides a comprehensive but concise go-to reference for the whole IVF team.
- Enables busy clinicians, embryologists, counselors, and staff to access information quickly.
- Brings an established resource up to date with current practice.

SERIES IN MEDICAL PHYSICS AND BIOMEDICAL ENGINEERING

An Introduction to Rehabilitation Engineering

SECOND EDITION



Edited by
**Rory A. Cooper, Hisaichi Ohnabe,
and Rosemarie Cooper**



An Introduction to Rehabilitation Engineering

2nd Edition

Edited by Rory A. Cooper, Hisaichi Ohnabe and Rosemarie Cooper

November 2025
ISBN 9781032121529
368 Pages, 113 B/W Illustrations
Subject: Biomedical Engineering / Medical Devices
www.routledge.com/9781032121529



Rory A. Cooper

is an American bioengineer who currently serves as FISA/PVA Distinguished Professor, Past Chair, in the Department of Rehabilitation Science and Technology and professor of bioengineering, physical medicine and rehabilitation, and orthopedic surgery at the University of Pittsburgh. In 2023, Cooper was presented with the National Medal of Technology and Innovation by President Joe Biden.

Hisaichi Ohnabe

is a professor emeritus of Niigata University of Health & Welfare and an Adjunct Professor at the University of Pittsburgh.



Rosemarie Cooper

MPT is Associate Director for Stakeholder Engagement at the Human Engineering Research Laboratories at the University of Pittsburgh.

In response to the growing demand for a foundational resource in rehabilitation engineering, Dr. joins a team of knowledgeable contributors to present the fully updated *Introduction to Rehabilitation Engineering, Second Edition*. This comprehensive guide introduces both foundational principles and real-world applications of rehabilitation engineering (RE), making it an essential text for students, educators, and professionals alike. Covering 18 in-depth chapters, this edition explores key areas such as wheeled mobility, prosthetics, orthotics, rehabilitation robotics, accessible transportation, universal design, digital accessibility, and adaptive sports technologies.

Structured with clear learning objectives, chapter-end study questions, and a comprehensive glossary, this book supports both academic instruction and lifelong learning. With a focus on user-centered design and interdisciplinary collaboration, it equips readers to meet the challenges of modern rehabilitation engineering with creativity, understanding, and technical expertise.

KEY FEATURES:

- Covers essential topics such as device design, service delivery models, universal design principles, and technology transfer mechanisms.
- Emphasizes real-world applications of RE, including areas like wheelchair design, prosthetics and orthotics, web accessibility and communications technology, robotics in rehabilitation, and adaptive sports, offering readers a tangible understanding of how these technologies impact daily life.
- Serves as a concise yet thorough introduction, providing readers with a solid foundational understanding of RE, while stimulating further exploration and research in the field.

Veterinary Controversies and Ethical Dilemmas

Provocative Reflections on Clinical Practice

Edited by Tanya Stephens, Eddie Clutton,
Polly Taylor and Kathy Murphy



Veterinary Controversies and Ethical Dilemmas

Provocative Reflections on Clinical Practice

Edited by Tanya Stephens, Eddie Clutton,
Polly Taylor and Kathy Murphy

September 2025
ISBN 9781032579863
434 Pages, 6 Color & 3 B/W Illustrations
Subject: Veterinary
www.routledge.com/9781032579863

Tanya Stephens

is a veterinarian, researcher, and ethics advocate. She edits One Welfare in Practice and holds leadership roles in animal welfare organizations. Her interests include wildlife, sustainability, and veterinary ethics.

Eddie Clutton

is a veterinary anaesthesiologist, professor, and Clinical Director at the Roslin Institute. He co-founded EthicsFirst and received multiple awards for his contributions to anaesthesia, ethics, and veterinary science.

Polly Taylor

is a veterinary anaesthesia expert, researcher, and educator. She has received multiple international honors and co-directs Topcat Metrology Ltd, developing pain assessment tools for animals across species.

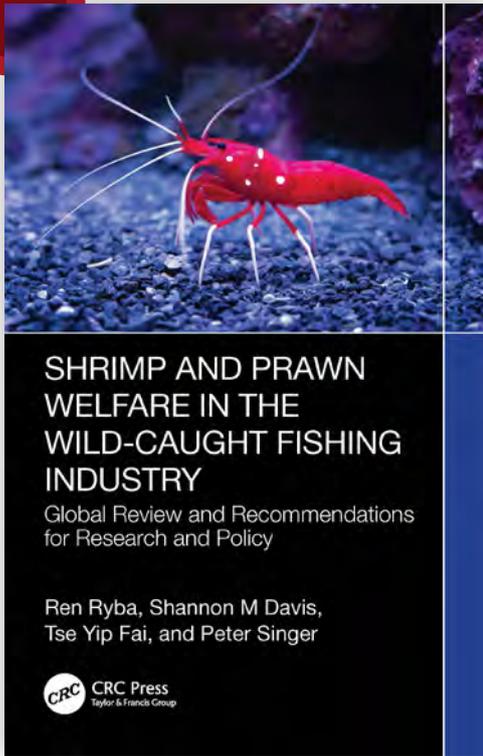
Kathy Murphy

is a veterinary anaesthetist, neuroscientist, and consultant. She founded Barking Brains, co-founded EthicsFirst, and holds board roles. Her work spans academia, animal welfare, science communication, and change management.

This book identifies increasing concerns with the veterinary profession and confronts them provocatively, with a view to stimulating positive change. A central theme is the emergence of the profitable 'fur baby' which is being propagated through encouraged anthropomorphism, a limited evidence base, overdiagnosis, overtreatment, and practice corporatisation. Richly accompanied with thoughts on veterinary celebrity, the misrepresentation of veterinary 'success', research using client-owned animals, unregulated treatments and end-of-life decision-making, the book represents a small room full of large elephants. With experienced contributors from around the world, each chapter combines personal story with evidence-based reflections.

While many of the subjects presented will have undergone some degree of ethical analysis, the book itself does not intend to teach veterinary ethics; instead, its role is to identify key concerns with the profession's current trajectory and to present them with candour, from the perspective of concerned veterinary professionals.

Ideal for use within the veterinary curriculum to stimulate undergraduate thought and discussion, this book will also be a valuable reference for practitioners as the veterinary profession comes to terms with life in a post-truth era.



Shrimp and Prawn Welfare in the Wild-Caught Fishing Industry

A Global Review and Recommendations for Research and Policy

Ren Ryba, Shannon M. Davis, Tse Yip Fai and Peter Singer

September 2025
ISBN 9781032901459
150 Pages, 8 Color & 3 B/W Illustrations
Subject: Biology & Life Science
www.routledge.com/9781032901459



Ren Ryba

is a research scientist specializing in data analysis, modeling, and fisheries policy. They hold a PhD and live on Kaurna land in Adelaide, Australia.



Shannon Davis

leads research and policy at the Shrimp Welfare Project. With a background in marine conservation, they focus on improving welfare standards for decapod crustaceans.



Tse Yip Fai

researches AI ethics and animal welfare with Peter Singer. He co-authored a pioneering paper on animals in AI ethics and led Singer's 2024 China tour.



Peter Singer

is a world-renowned ethicist and author of *Animal Liberation*. He co-founded The Life You Can Save and received the 2021 Berggruen Prize, donating it to effective charities.

At 37 trillion individuals per year, wild-caught shrimp and prawns appear to be the single most numerous group of animals directly killed for human food consumption on the planet. Recent scientific developments suggest that at least some species of shrimp are sentient beings and, should that be the case, there is a need for policies that could improve shrimp welfare.

This book delves into the ethical implications of the probability that shrimp and prawns are capable of feeling pain and the welfare policies that could be adopted. It looks at global shrimp fisheries and their different animal welfare concerns, from the largest industrial trawlers in developed and developing countries to small-scale fisheries in developing countries. The authors provide a new dataset of the estimated numbers of individual shrimp caught by country and species, using this to describe the shrimp fishing industry in the world's top 30 countries by estimated catch.

Examining recent developments in government and industry policy, the book suggests ways that policymakers could improve wild-caught shrimp welfare, from installing electrical stunning equipment in large-scale trawl fisheries to improving supply chain practices in small-scale fisheries. It provides a roadmap for future research and policy to address this urgent, emerging challenge.



Zoo Animal Welfare

edited by
Paul Rose
Zoe Newnham
Ian Hickey



Zoo Animal Welfare

Edited by Paul Rose, Zoe Newnham and Ian Hickey

November 2025
ISBN 9781032547367
408 Pages, 133 Color & 8 B/W Illustrations
Subject: Biology & Life Science
www.routledge.com/9781032547367



Dr Paul Rose

is a Senior Lecturer at University of Exeter and researcher at WWT, Dr Paul Rose specializes in zoo animal behaviour and welfare. He contributes to zoo policy, education, and international conservation groups.



Zoe Newnham

is a senior hoofstock keeper at Marwell Zoo and lecturer at Sparsholt and University of Portsmouth, specializing in ungulate care, training, and applied zoo biology education and research.



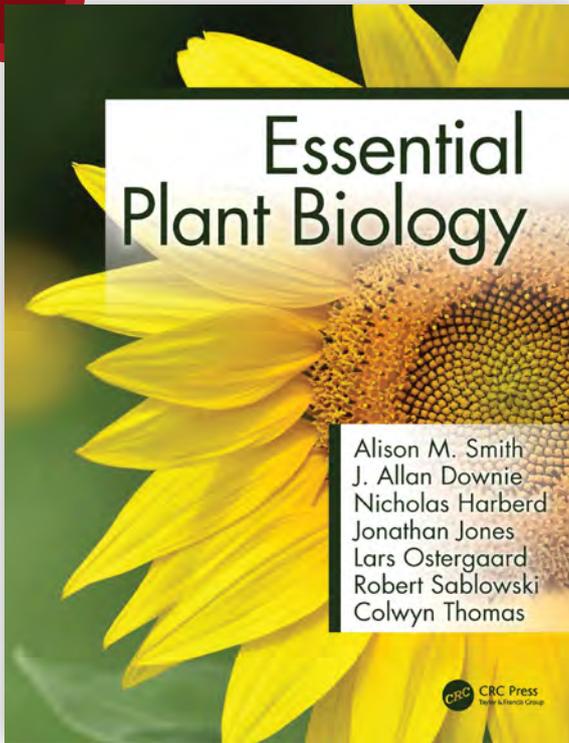
Ian Hickey

is Enclosure Development Manager at Chester Zoo, oversees animal exhibit design. He has a background in zookeeping, MSc in Wild Animal Biology, and consults on zoo design and welfare standards.

Zoo Animal Welfare unpicks the different concepts of welfare in the zoo and aquarium, considering how enclosure design, nutrition, conservation activities, visitor engagement and daily husbandry all need to have a welfare-focus to be relevant to the species being housed. The book provides the practical application of evidence-based welfare theory, centred on the concept of “welfare-focussed husbandry”, which enables zoo animals to experience positive welfare.

Recognising that welfare is a complex and challenging area of science, the first section of the book provides core introductory material defining welfare in the zoo and looking at how the wild is managed ethically. It then delves into current issues with contributed chapters exploring topics such as environmental enrichment, nutrition, the impacts of human presence in the zoo, conservation welfare, use of social media, and population management.

Packed with case studies and exploration of emerging issues in the field (e.g. novel technology for welfare assessment, welfare considerations of overlooked taxa), this book is essential reading for higher-level undergraduate and postgraduate students and academics who wish to study welfare of captive wild animals, as well as for all those working in animal care and zoo operations. *Zoo Animal Welfare* will empower readers to go “beyond the norm” when considering what zoo animals really need, applying their new knowledge for the benefit of both animals and zoos.



Essential Plant Biology

Alison M. Smith, J. Allan Downie, Nicholas Harberd, Jonathan Jones, Lars Ostergaard, Robert Sablowski and Colwyn Thomas

November 2025
ISBN 9781041081739
582 Pages, 529 Color & 38 B/W Illustrations
Subject: Botany & Plant Science
www.routledge.com/9781041081739

Allan Downie

is Emeritus Fellow at John Innes Centre researching plant-microbe signaling and nitrogen-fixing endosymbionts.

Jonathan Jones

is Senior Group Leader at Sainsbury Laboratory studying plant immune receptors and pathogen defense mechanisms.

Robert Sablowski

is Group Leader at John Innes Centre researching meristem growth and plant cell division coordination.

Colwyn M. Thomas

is Course Director at John Innes Centre; teaches genetics and researches plant-pathogen interactions.

Lars Østergaard

is Oxford professor studying genetic and hormonal control of plant reproductive development.

Alison M. Smith

is Emeritus Fellow at John Innes Centre researching starch and sucrose metabolism in plants.

Nicholas Harberd

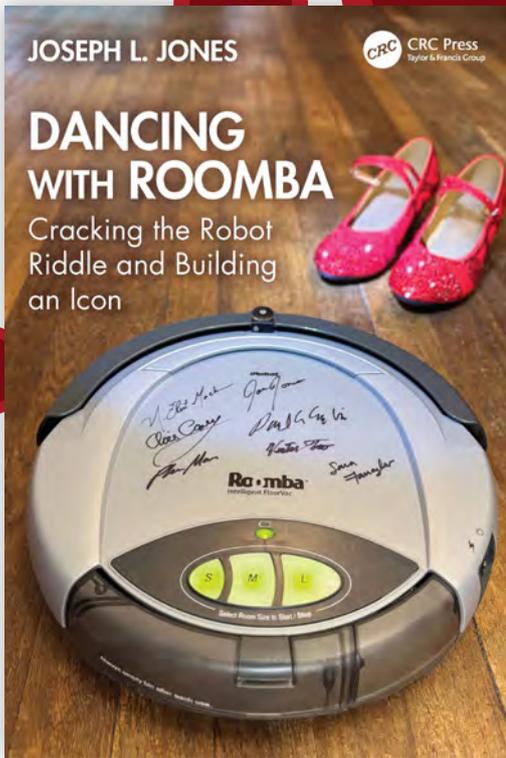
is Emeritus Fellow at Oxford researching hormone regulation of plant growth and sustainable crop yields.

This exciting new textbook presents current knowledge of plant biology, highlighting important topics for future development and research. Starting with the evolutionary history of plants, the book addresses the dynamic nature and regulation of plant genomes, the conversion of products of photosynthesis into the vast diversity of molecules that comprise the plant body, and the nature and coordination of growth, development, and reproduction of the plant. The book next describes how these fundamental properties of plants are impacted by their surroundings: by the physical environment including light, daylength and temperature, and by interactions with other organisms - pests and pathogens, pollinators and microbes that supply nutrients. Finally, the book outlines the history, importance and future of human interactions with plants.

KEY FEATURES:

- Each chapter is prefaced with “Learning Objectives” directly related to the text that follows as a convenient scene-setter for both students and instructors
- Throughout the book, text descriptions are accompanied by informative, high-quality illustrations aiding understanding of complex concepts and mechanisms
- Extensive online material expands and enhances understanding of many of the topics covered, allowing students to test their knowledge of chapter content and prepare for formal examinations

Carefully designed for, and written at, a level accessible to all undergraduate biologists who have a grounding in the fundamentals of molecular biology and biochemistry, *Essential Plant Biology* is also a valuable resource for postgraduates in plant research. For lecturers, the breadth of coverage and clear organization facilitate the teaching of both complete courses in plant science and more focused topics in plant biology.



Dancing with Roomba

Cracking the Robot Riddle and Building an Icon

Joseph L. Jones

October 2025
ISBN 9781032890616
256 Pages
Subject: Robotics

www.routledge.com/9781032890616



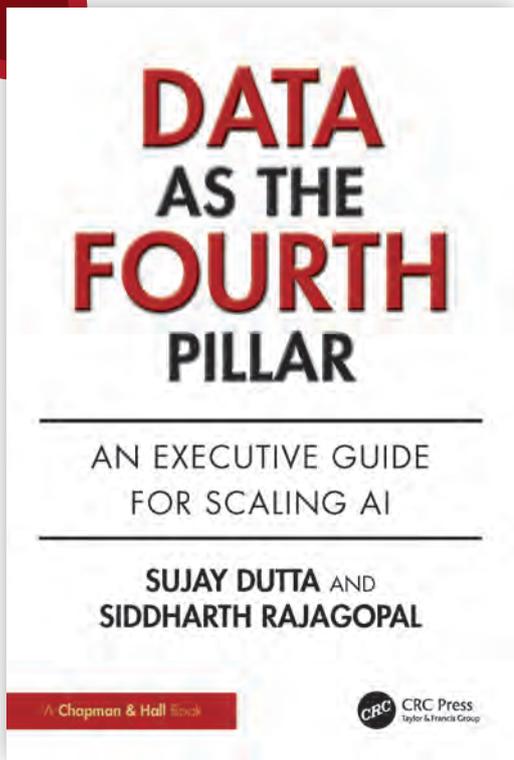
Joseph L. Jones

a lifelong tinkerer and inventor, focuses on the practical application of robotic technology to real-world problems. In that pursuit he co-founded Tertill Corporation, a manufacturer of robots that weed home gardens, and Harvest Automation, Inc., a company that builds autonomous robots for the nursery and greenhouse industry. At both firms he served as CTO. Earlier, as senior roboticist, he spearheaded the development of Roomba, the world's first successful home floor-cleaning robot. A graduate of MIT, he is author of three earlier books on robotics and holds over 80 US and several international patents.

Dancing with Roomba tells the unexpected story of the world's favorite robot.

For five decades, corporations spent millions pursuing a floor-cleaning robot. Legions of engineers toiled, dozens of patents issued, yet every effort failed. Then came Roomba. Selling nearly 50 million units since its launch, Roomba's unlikely success sprang from a breakthrough at an MIT robotics lab, an inventor who persevered through years of setbacks, and an inspired team that worked as one to smash every problem. This book provides a rare view behind the scenes, revealing how a revolutionary product came to be, how it works, and how a tiny company was able to best a crowd of corporate giants.

Written in an easy, narrative style, *Dancing with Roomba* is accessible to all. Anyone who owns a Roomba, works in technology, dreams of building a product, or is just curious about the robot that launched a million memes will find much to love.



Data as the Fourth Pillar

An Executive Guide for Scaling AI
Sujay Dutta and Siddharth Rajagopal

August 2025
ISBN 9781032835990
230 Pages, 63 B/W Illustrations
Subject: Data Science
www.routledge.com/9781032835990



Sujay Dutta

is a seasoned technology and business leader with 25+ years of global experience. He believes the future is being shaped at the intersection of AI, Business outcomes, Culture, and Data ("A.B.C.D."). Throughout his career, Sujay has worked with top technology innovators such as Databricks, Informatica, and SAP, as well as leading IT services firms including Capgemini, Harman Connected Services, HCL Technologies, and Tata Consultancy Services.



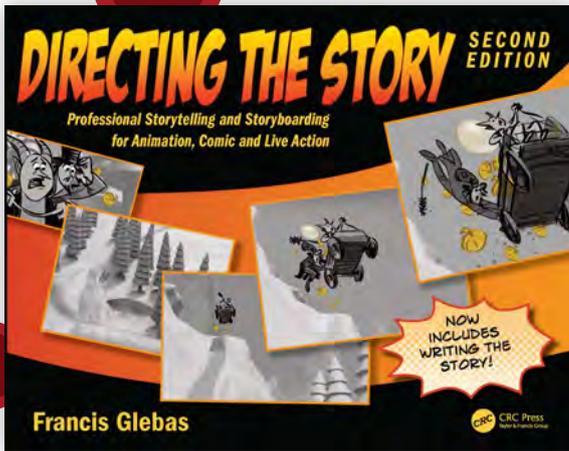
Siddharth (Sidd) Rajagopal

is a Chief Architect in the Field CTO Organization at Informatica. In his role, he engages with senior executives at enterprise providing thought leadership around data and data management by sharing his insights and learnings. Prior to this, he worked as a Consultant and Architect in various large data management programs at Cognizant and Accenture. He lives in the Netherlands with his family.

Data as the Fourth Pillar reasons that data should be considered the fourth pillar of every enterprise, alongside people, processes, and technology. Aimed at Boards, CEOs, and CxOs, this book provides a compelling case for why and how they should treat data as a strategic asset. It presents a comprehensive, success-by-design approach for enterprises, guiding them through a maturity framework to accelerate their data-centric journey.

This book addresses the "why," the "what," and the "how" of achieving this goal in measurable terms. It introduces key performance indicators (KPIs) such as total addressable value (TAV) and expected addressable value (EAV) through data to help measure the impact provided by the data pillar. This book also explores the symbiotic relationship between artificial intelligence (AI) and data, illustrating how both enable and benefit from each other. A case study by Rudiger Eck from Audi AG provides practical insights into the concepts and frameworks discussed.

This book is an essential resource for business executives in both small to medium businesses (SMBs) and large enterprises, helping them navigate a highly complex and hypercompetitive business landscape while accelerating business value for their stakeholder communities.



Directing the Story

Professional Storytelling and Storyboarding for Animation, Comics and Live Action, *2nd Edition*

Francis Glebas

October 2025
ISBN 9781032753065
360 Pages, 460 Color Illustrations
Subject: Animation

www.routledge.com/9781032753065

Francis Glebas

recently retired, has been making stories and movies for 60 years, professionally for 51 years. He's worked his way up from painting animation cels on a night crew to directing a feature film. He's worked at most of the major studios. Currently, he teaches filmmaking skills and is writing a infographic novel about a new theory of story, from an alien perspective. Be sure to check out his other Focal Press book, *The Animator's Eye* which takes you through the complete process of making an animated film.

"This book grew out of desperate need. I was a storyboard artist at Disney and had no idea what I was doing. At Disney I was surrounded by amazing talents. I went into work early and typed up notes on what I was learning. This experience became *Directing the Story*. I went on to storyboard over a dozen features, several TV animated shows and directed Donald Duck in *Fantasia 2000*, *Piglet's Big Movie* and 2 seasons of *Mira Royal Detective*.

This new addition includes storyboarding for 3D animation illustrated with storyboard examples. During my teaching storyboarding, I noticed many beginners struggle with drawing the figure. I've introduced drawing star figures. They're the equivalent to the flour sack animators use to learn to animate flow, force, timing and shape distortion. And once the student masters that, I show how the anatomy drops right into place.

Out of my frustration of trying to write my own stories and watching the waste at the studio's race to get things into production I've struggled for years to discover the secrets of story. I'm currently working on a new theory of story which shows how all the parts of story, character, plot and story work together. I'm including the beginning basics of this theory which allows my students to come up with a story in 7 minutes.

Plot takes longer."



Mastering Cybersecurity

A Practical Guide for Professionals,
Volume 1 and Volume 2

Akashdeep Bhardwaj

Volume 1

December 2024
ISBN 9781032893907
218 Pages, 243 Color & 9 B/W Illustrations
Subject: Gaming & Animation

www.routledge.com/9781032893907

Volume 2

October 2025
ISBN 9781032893921
286 Pages, 262 B/W Illustrations
Subject: Gaming & Animation

www.routledge.com/9781032893921



Dr. Akashdeep Bhardwaj

is working as a Professor and Head of Cybersecurity Center of Excellence at the University of Petroleum & Energy Studies (UPES), Dehradun, India. An eminent IT industry expert with over 28 years of experience in areas such as Cybersecurity, Digital Forensics, and IT Operations, Dr. Bhardwaj mentors engineering graduates, masters, and doctoral students and leads industry projects and research. Dr. Bhardwaj is among the Top 2% research scientists according to Stanford University release in September 2024.

In today's ever evolving digital landscape, cybersecurity professionals are in high demand. These books equip you with the knowledge and tools to become a master cyberdefender. The handbooks take you through the journey of ten essential aspects of practical learning and mastering cybersecurity aspects in the form of two volumes.

Volume 1: The first volume starts with the fundamentals and hands on of performing log analysis on Windows and Linux systems. You will then build your own virtual environment to hone your penetration testing skills. But defense isn't just about identifying weaknesses; it's about building secure applications from the ground up. The book teaches you how to leverage Docker and other technologies for application deployments and AppSec management. Next, we delve into information gathering of targets as well as vulnerability scanning of vulnerable OS and Apps running on Damn Vulnerable Web Application (DVWA), Metasploitable2, Kioptrix, and others. You'll also learn live hunting for vulnerable devices and systems on the Internet.

Volume 2: The journey continues with volume two for mastering advanced techniques for network traffic analysis using Wireshark and other network sniffers. Then, we unlock the power of open source intelligence (OSINT) to gather valuable intel from publicly available sources, including social media, web, images, and others. From there, explore the unique challenges of securing the internet of things (IoT) and conquer the art of reconnaissance, the crucial first stage of ethical hacking. Finally, we explore the dark web – a hidden corner of the internet – and learn safe exploration tactics to glean valuable intelligence. The book concludes by teaching you how to exploit vulnerabilities ethically during penetration testing and write pen test reports that provide actionable insights for remediation.

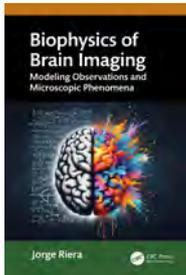
The two volumes will empower you to become a wellrounded cybersecurity professional, prepared to defend against today's everincreasing threats.

BIOMEDICAL ENGINEERING

TEXTBOOK

Biophysics of Brain Imaging

Modeling Observations and Microscopic Phenomena



Jorge Riera

This book takes a multiscale overview and theoretical framework for all existing brain imaging modalities. It also presents technological development for data fusion and underlying biophysical models. *Biophysics of Brain Imaging* is intended for undergraduate and graduate level students in Computational Neuroscience, Medical Imaging, Electrophysiology, and Brain Data Analysis and Modeling courses. Problems and exercises are provided throughout the text.

CRC Press

Market: Biomedical Engineering

August 2025: 234x156: 314pp: 105 illus, 31 halftones, 74 line drawings

Hb: 978-0-367-90149-3: **£140.00**

★ For full contents and more information, visit: www.routledge.com/9780367901493

Designing Simple Instructions for Medical Products



Michael Wiklund, Jonathan Kendler and Katelynn Larson

This book presents core principles pertaining to narrative and graphical content and explores the nuances of making instructions – an important part of a medical product’s user interface – safe, effective, and satisfying to use. It presents many design principles in an artful manner, replete with interesting, real-world examples. This book will help anybody, from novice to experienced pro, tasked with designing instructions for a medical product. In turn, better instructions should help manufacturers produce demonstrably safe and effective products with clear benefits accruing to the healthcare system and to patients.

CRC Press

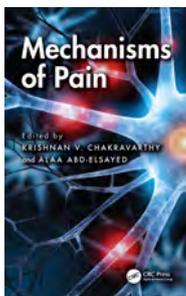
Market: Biomedical Engineering

August 2025: 254x178: 240pp: 140 illus, 104 halftones, 36 line drawings

Pb: 978-1-032-72289-4: **£65.99**

★ For full contents and more information, visit: www.routledge.com/9781032722894

Mechanisms of Pain



Edited by Krishnan Chakravarthy and Alaa Abd-Elsayed

This book presents an intensive review of the anatomy, physiology and pharmacology of the systems that mediate nociceptive processing. The authors cover areas that include anatomy, central and peripheral nerve processing, tissue and nerve injury states, as well as preclinical models of pain. The book also covers important clinical concepts with specific emphasis on mechanisms of action. This comprehensive book is to guide undergraduate, graduate, and clinicians in the field of pain medicine on important concepts related to the science of pain.

CRC Press

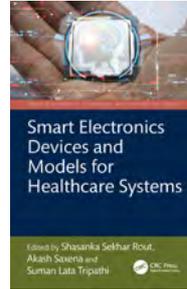
Market: Biomedical Engineering

June 2025: 234x156: 328pp: 76 illus, 58 halftones, 18 line drawings

Hb: 978-0-367-53317-5: **£115.00**

★ For full contents and more information, visit: www.routledge.com/9780367533175

Smart Electronics Devices and Models for Healthcare Systems



Edited by Shasanka Sekhar Rout, Akash Saxena and Suman Lata Tripathi, LPU, India

Series: *Smart Electronics, Computing, and Internet of Things*

In light of recent environmental catastrophes and the COVID-19 pandemic, healthcare has received rehabilitated focus and consideration from researchers across disciplines. This text offers a comprehensive exploration of the intersection between technology and healthcare, providing insights into the design, implementation, and impact of smart electronic devices and models in modern healthcare systems. The text is primarily written for senior undergraduates, graduate students, and academic researchers in the fields of electrical engineering, electronics and communications engineering, computer science

and engineering, and biomedical engineering.

CRC Press

Market: Electrical Engineering

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Hb: 978-1-032-90883-0: **£130.00**

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Transforming Healthcare

Mode, Technologies, and Implementation



Edited by Ankush Jain, NSUT, India, Vishal Srivastava, MNNIT, Allahabad, India, Gaurav Singal, NSUT, India and Mohamed Mosbah

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This comprehensive volume explores cutting-edge technologies, groundbreaking methodologies, and insightful ethical considerations. It brings together leading minds and research across diverse domains, offering readers a glimpse into the future of healthcare. From leveraging AI in diagnostics and personalized treatments to advancing telemedicine and remote patient monitoring, the text addresses real-world challenges and opportunities in the rapidly evolving healthcare industry.

Packed with diverse perspectives and actionable insights, it’s a must-read for anyone passionate about making a difference in healthcare.

CRC Press

Market: Electrical Engineering

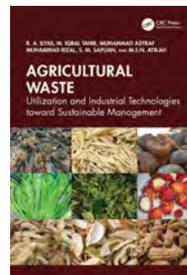
July 2025: 234x156: 282pp: 78 illus, 25 halftones, 53 line drawings

Hb: 978-1-032-75654-7: **£120.00**

★ For full contents and more information, visit: www.routledge.com/9781032756547

Agricultural Waste

Utilization and Industrial Technologies toward Sustainable Management



Edited by R.A. Ilyas, M. Iqbal Tahir, Muhammad Asyraf Muhammad Rizal, Universiti Teknologi Malaysia, Malaysia, S.M. Sapuan, Universiti Putra, Malaysia and M.S.N. Atikah

This book provides an overview of agricultural waste and its utilization in various industrial technologies for sustainable management. It covers a wide range of topics, including the characterization of agricultural waste, its environmental impacts, and its use in different industrial sectors. The book also discusses the latest technological advancements in the conversion of agricultural waste into value-added products and the opportunities and challenges associated with their implementation. Offering a multidisciplinary approach, it serves as a valuable resource for researchers, academics, policymakers, and engineers interested in the sustainable management of agricultural waste.

CRC Press

Market: Chemical Engineering

September 2025: 254x178: 662pp: 214 illus, 164 halftones, 50 line drawings

Hb: 978-1-032-75054-5: **£150.00**

★ For full contents and more information, visit: www.routledge.com/9781032750545

Commercial Scale Production of Nanomedicines



Edited by **Aliasgar Shahiwala**, Dubai Pharmacy College, United Arab Emirates, **Ajay J. Khopade** and **Vandana B. Patravale**, Institute of Chemical Technology, Mumbai, India

The commercial production of nanomedicines involves challenges related to scalability, reproducibility, safety, and regulatory approvals. It is essential to have access to a preparation method that can produce large quantities of nanomedicines in a scalable way while maintaining a consistently high level of quality and batch-to-batch reproducibility. This book provides comprehensive guidance on commercial-scale production of nanotechnology-based products, facilities requirements, and quality assurance. It

serves as a valuable resource for students and researchers in pharmaceuticals, pharmaceutical technology, drug delivery, drug targeting, and biomedical engineering.

CRC Press

Market: Bioengineering / Pharmaceutical Engineering

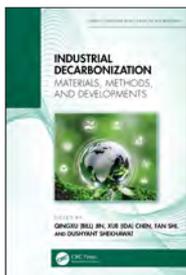
August 2025: 234x156: 403pp: 55 illus, 35 halftones, 20 line drawings

Hb: 978-1-032-77387-2: **£130.00**

★ For full contents and more information, visit: www.routledge.com/9781032773872

Industrial Decarbonization

Materials, Methods, and Developments



Edited by **Qingxu (Bill) Jin**, **Xue (Ida) Chen**, **Fan Shi** and **Dushyant Shekhawat**, U.S. Department of Energy

Series: Green Chemistry and Chemical Engineering

Materials and processes for industrial decarbonization are being developed to reduce the carbon footprint for CO₂-intensive industries. This book, the first of its kind in industrial decarbonization, presents the research and development efforts in materials and processes for industrial decarbonization, including but not limited to chemical, cement, iron/steel, paper/pulp, building and other industries. Featuring expert experience from academia, national labs, and industry, this book provides readers in chemical, process, construction, and related industries learn and

confidently design and specify decarbonization technology-related materials and methods.

CRC Press

Market: Chemical Engineering

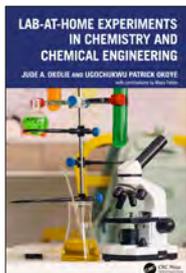
October 2025: 234x156: 600pp: 110 illus, 92 halftones, 18 line drawings

Hb: 978-1-032-82179-5: **£130.00**

★ For full contents and more information, visit: www.routledge.com/9781032821795

TEXTBOOK

Lab-At-Home Experiments in Chemistry and Chemical Engineering



Jude A. Okolie and Ugochukwu Patrick Okoye

With the rise of remote and hybrid learning, there is an increasing need for flexibility around laboratory-based coursework. This book offers readers a guide to conducting a wide variety of Chemistry and Chemical Engineering labs and experimental procedures that can be completed easily and safely outside of a traditional lab setting, including at home. It helps students and interested readers achieve hands-on learning of chemistry- and chemical engineering-based concepts without needing sophisticated lab equipment. It features ancillary videos and downloadable spreadsheets. It is aimed at chemistry and chemical engineering students, and general readers interested in these disciplines.

CRC Press

Market: Chemical Engineering

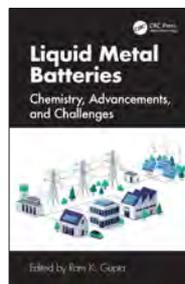
October 2025: 234x156: 180pp: 84 illus, 79 halftones, 5 line drawings

Pb: 978-1-032-44914-2: **£33.99**

★ For full contents and more information, visit: www.routledge.com/9781032449142

Liquid Metal Batteries

Chemistry, Advancements, and Challenges



Edited by **Ram K. Gupta**

This book offers a broad overview of the current knowledge and future challenges in liquid metal batteries. It details the fundamental science of liquid metal batteries, materials for cathode and anode, various synthesis methods, and approaches to modify their properties to provide high energy and power densities, along with long life and stable electrochemical characteristics. With chapters written by experts in energy from around the globe, this book serves as a textbook for advanced students and offers new guidelines to researchers and industries working in energy and materials engineering.

CRC Press

Market: Materials and Energy Engineering

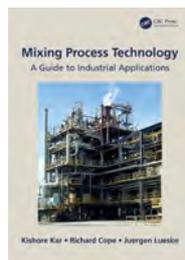
September 2025: 234x156: 246pp: 49 illus, 42 halftones, 7 line drawings

Hb: 978-1-032-78912-5: **£120.00**

★ For full contents and more information, visit: www.routledge.com/9781032789125

Mixing Process Technology

A Guide to Industrial Applications



Kishore Kar, **Richard Cope** and **Juergen Lueske**

Industrial mixing processes present multiple optimization challenges to producing desirable products. This book shares the authors' extensive knowledge of mixing research and industrial practice. It features twenty industrial mixing chapters that are purposely light on mixing fundamentals, while heavy on practical mixing applications. This text serves as an applied guide to industrial mixing for chemical and process engineers and students who want brief explanations of mixing concepts with real-life examples and software to help perform associated design calculations.

CRC Press

Market: Chemical and Process Engineering

July 2025: 254x178: 467pp: 307 illus, 143 halftones, 164 line drawings

Hb: 978-1-032-99861-9: **£130.00**

★ For full contents and more information, visit: www.routledge.com/9781032998619

TEXTBOOK

Process Design, Economics, and Project Engineering



Wayne Seames, USAUSAUniversity of North Dakota, Grand Forks, ND, USA

The principal goal of this textbook is to prepare process/chemical engineers for careers in a wide variety of process-related jobs. The book will also serve as reference resource for engineers working in the process and process design industries. The book assumes prerequisite knowledge of material and energy balances, heat transfer, fluid flow, and mass transfer but does not require any prerequisite knowledge of economics, process control, process safety, or material selection. It is uniquely organized to follow the project life cycle that is most commonly used by engineering contractors and the operating companies they serve in the process industries.

CRC Press

Market: Chemical Engineering

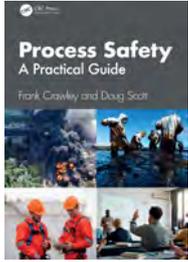
September 2025: 234x156: 496pp: 208 illus, 19 halftones, 189 line drawings

Hb: 978-1-032-83361-3: **£99.99**

★ For full contents and more information, visit: www.routledge.com/9781032833613

Process Safety

A Practical Guide



Frank Crawley and Doug Scott

This book provides early career engineers with a strong practical background in Process Safety. It contains basic theory to bolster understanding of the subject, and gives practical information covering both design and operation of process plants. It offers an interactive approach with frequent links between chapters and inclusion of numerous case histories to illustrate and support the text. With its accessible and hands-on approach, this book gives early career chemical engineers a deeper understanding of the issues they will face while on the job and practical solutions to address and avoid problems. The book's many cases studies will also be of value to more experienced engineers.

CRC Press

Market: Chemical Engineering

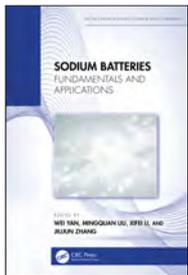
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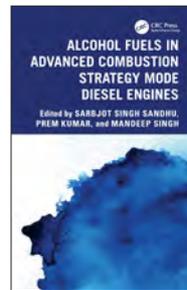
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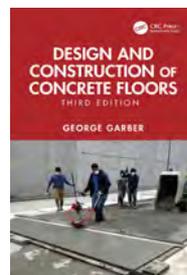
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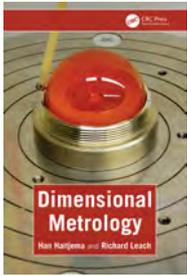
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Han Haitjema, KU Leuven, Belgium and Richard Leach, University of Nottingham, United Kingdom

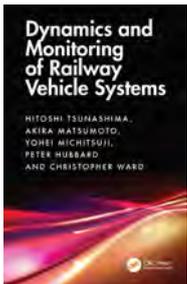
This book provides in-depth coverage of metrology principles for students, practicing engineers, technologists, and researchers. It presents and explains mathematical principles and treatments and practical applications of metrology, with numerous chapter exercises that link theory to the solution of practical problems. Computer-based classes of dimensional metrology are covered, such as CMM-technology, areal surface measurement, and X-ray computed tomography. Readers are shown how to perform and evaluate dimensional measurements and interpret the results. Measuring instruments and methods are explained so readers can determine which to use for specific applications.

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Hitoshi Tsunashima, Nihon University, Japan, Akira Matsumoto, College of Industrial Technology, Japan, Yohei Michitsuji, Peter Hubbard and Christopher Ward

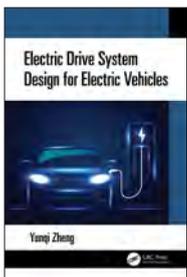
This book provides cutting edge research into railway vehicle dynamics and the condition monitoring of railway vehicle and track. Using real world global examples, the book focuses on safety and maintenance from a global perspective. Beginning with an explanation of the practical theory behind dynamics and running safety when passing a curve, the book enables readers to understand the motion and vibration of railway vehicles both in theory and in practice.

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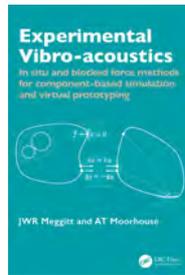
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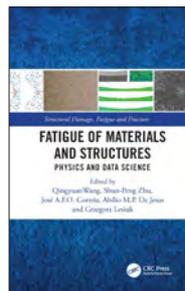
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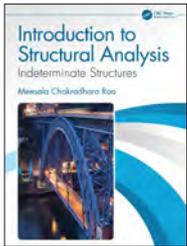
V.P. Sethi, Punjab Agricultural University, India
The comprehensive software-based engineering approach in this book provides an in-depth exploration of the latest innovations in greenhouse thus transforming the existing Controlled Environment Agriculture (CEA) to a futuristic Greenhouse Smart Agriculture (GSA) aiding the readers to optimize crop yields, reduce environmental impact, and enhance farm profitability through software decision support systems. From renewable energy solutions and software-driven sustainable practices to AI-powered optimization and integrated smart greenhouse design, it covers the entire spectrum of GSA including practical knowledge, global case studies and real-world examples.

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TEXTBOOK

Introduction to Structural Analysis

Indeterminate Structures



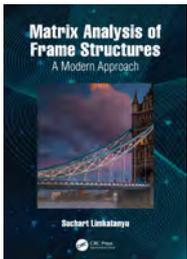
Meesala Chakradhara Rao
This textbook provides a comprehensive analysis of indeterminate structures by both force and displacement methods including the basics, their usage in the analysis of beams, rigid joint and pin joint plane frames. Major coverage includes analysis of beams, rigid joint plane frames, and pin joint plane frames by various force and displacement methods followed by analysis of multi-storey frames via approximate methods, influence lines for indeterminate structures and two hinged arches. Each chapter contains introduction, methodology, necessary derivations/equations, and examples. This book is aimed at undergraduate and senior undergraduate students in structural and civil engineering.

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TEXTBOOK

Matrix Analysis of Frame Structures

A Modern Approach



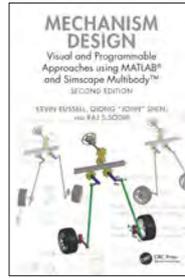
Suchart Limkatanyu
Advancing computer technology has created new opportunities for sophisticated assessment and analysis of structural performance, especially using matrix and finite element methods. This textbook for senior undergraduates and graduate students covers the fundamentals required in any approach to structural analysis, strong form, equilibrium, and compatibility, and with an introduction to virtual work principles to express equilibrium and compatibility conditions of a frame structure, making use of Tonti diagrams. It then sets out in more detail the matrix approach to structural analysis, including construction of the master stiffness matrix.

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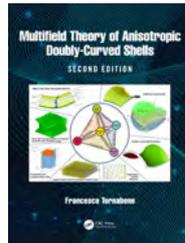
Kevin Russell, New Jersey Institute of Technology, USA,
Qiong "John" Shen, Softalink LLC, USA and **Raj S. Sodhi**,
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CRC Press

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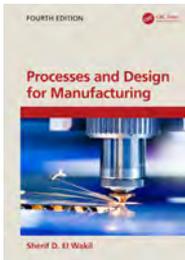
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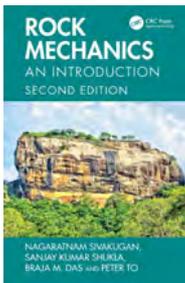
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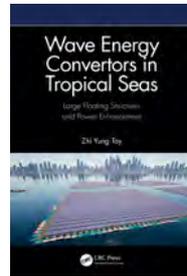
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CRC Press

Market: Engineering - Energy

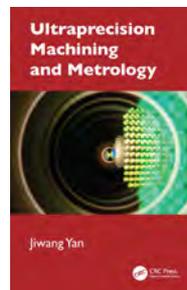
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CRC Press

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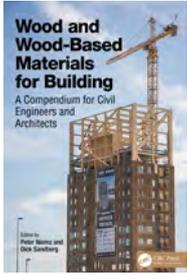
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A Compendium for Civil Engineers and Architects



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This guide is both accessible enough and technical enough to suit both architects and civil engineers, and also vocational students.

CRC Press

Market: Structural Engineering and Architecture

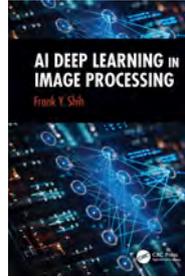
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Frank Y. Shih, New Jersey Institute of Technology, Newark, NJ, USA

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CRC Press

Market: Electrical Engineering

October 2025: 234x156: 736pp: 421 illus, 165 halftones, 256 line drawings

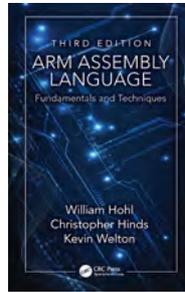
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Halit Eren, Curtin University, Bentley, Australia

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CRC Press

Market: Electrical Engineering

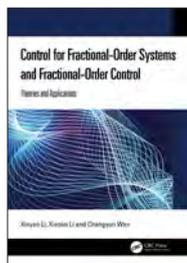
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Control for Fractional-Order Systems and Fractional-Order Control

Theories and Applications



Xinyao Li, Xiaolei Li and Changyun Wen, Nanyang Technological University, Singapore

This book provides systematic guidance and theoretical basis for control theories and applications of fractional-order control systems. It describes the background, mathematical preliminaries, and recent progress with related illustrated examples, and proposes suggested future trends. This book is an invaluable reference for advanced undergraduate and graduate students and researchers in the fields of control science and engineering, fractional-order control schemes, control for fractional-order systems, and related topics.

To understand this book, readers should have a knowledge of basic linear and nonlinear control theory.

CRC Press

Market: Engineering Mathematics

October 2025: 254x178: 200pp: 95 illus, 2 halftones, 93 line drawings

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CRC Press

Market: Electrical Engineering

September 2025: 254x178: 784pp: 821 illus, 13 halftones, 808 line drawings

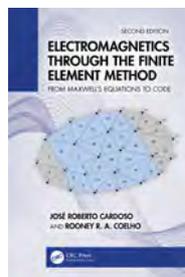
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José Roberto Cardoso, Universidade de São Paulo, Brazil and **Rooney R.A. Coelho**

This book presents the easiest way to learn finite element method (FEM) for electromagnetism - from static phenomena to high frequencies in a single book, based solely on Maxwell's equations. All the formalism associated with FEM is presented in detail, with simple numerical examples, duly commented to facilitate understanding of the method. This simplified approach presented in this new edition will not only benefit undergraduate students, but will also be useful to practising engineers and researchers looking to introduce themselves to these numerical methods.

CRC Press

Market: Electrical Engineering

December 2025: 234x156: 376pp: 162 illus, 8 halftones, 154 line drawings

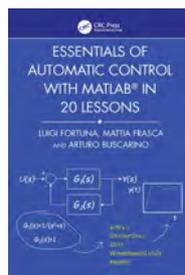
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TEXTBOOK

Essentials of Automatic Control with MATLAB in 20 Lessons



Luigi Fortuna, University of Catania, Italy, **Mattia Frasca**, University of Catania, Italy. and **Arturo Buscarino**, University of Catania, Italy.

This book is designed to explain the fundamental principles of automatic control through 20 lessons, each incorporating worked examples and MATLAB®-based exercises to help readers effectively understand and apply the proposed methods. It offers a concise and accessible resource for learning automatic control, blending simplicity with clarity. Drawing on decades of teaching experience, the authors aim to provide an approachable introduction to the core concepts of the discipline, encouraging further exploration through independent study.

CRC Press

Market: Electrical Engineering

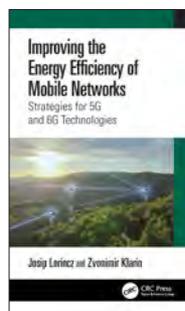
August 2025: 234x156: 286pp: 162 illus, 162 line drawings

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Strategies for 5G and 6G Technologies



Josip Lorincz and **Zvonimir Klarin**

This book provides analysis of the problem of high energy consumption of mobile networks and describes methods for improving the energy efficiency of mobile networks. It explores new technologies and strategies that will enable mobile networks to operate with less energy and become more sustainable while not compromising service quality. This book is ideal for researchers, industry professionals and scholars who want to gain a deeper understanding of the excessive mobile network energy consumption and contribute to the development of energy-efficient, sustainable mobile networks.

CRC Press

Market: Electrical Engineering

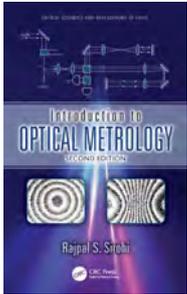
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TEXTBOOK • 2nd Edition

Introduction to Optical Metrology



Rajpal S. Sirohi, Austin, Texas, USA

Series: *Optical Sciences and Applications of Light*

This book describes both theory and practice of optical techniques to measure various parameters encountered routinely in science and engineering. It examines the theory and practice of various measurement methodologies utilizing both the corpuscular and the wave nature of light. The primary audience for this book is undergraduate and graduate students who specialize in optics. It will also be useful to researchers and professionals working on optical testing and fiber optic- and MEMS-based measurements. A solutions manual and figure slides are available for adopting professors.

CRC Press

Market: Engineering - Electrical

September 2025: 234x156: 592pp: 303 illus, 303 line drawings

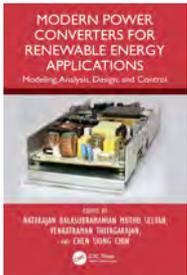
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Modern Power Converters for Renewable Energy Applications

Modeling, Analysis, Design, and Control



Edited by Natarajan Balasubramanian Muthu Selvan, Venkatraman Thiyagarajan and Cheng Siong Chin, Newcastle University, Singapore.

Modern Power Converters for Renewable Energy Applications offers a comprehensive guide to the modeling, analysis, design, and control of these critical technologies, tailored for solar PV, wind energy, and energy storage applications. Key topics include grid synchronization, power quality improvement, and compliance with international standards, equipping readers to handle the complexities of modern power grids. The book also explores the integration of energy storage systems, emphasizing their role in stabilizing renewable outputs and enhancing system flexibility.

CRC Press

Market: Electrical Engineering

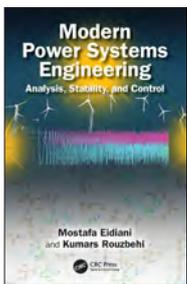
September 2025: 234x156: 564pp: 401 illus, 39 halftones, 362 line drawings

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Modern Power Systems Engineering

Analysis, Stability, and Control



Mostafa Eidiani and Kumars Rouzbehi

This book sets itself apart by incorporating real-world case studies from diverse power grids, like those in the US, UK, Iran and Spain. By directly referencing industry-standard software (DigSILENT, ETAP, or PSS/E) and going beyond theoretical explanations, it effectively bridges the gap between academic knowledge and industry practice. Readers will gain the essential skills and software proficiency required to thrive in power companies, consulting firms, research centers, and similar environments. Furthermore, the book serves as a valuable resource for students pursuing further education, providing a deep understanding of complex power systems and their analysis methods

CRC Press

Market: Electrical Engineering

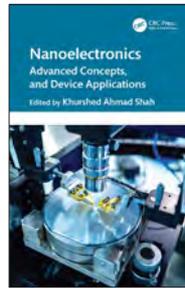
October 2025: 229x152: 312pp: 259 illus, 5 halftones, 254 line drawings

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Nanoelectronics

Advanced Concepts, and Device Applications



Edited by Khurshed Ahmad Shah, Cluster University Srinagar, India

The book covers the latest advancements in the field of nanoelectronics, interaction of light with matter, optical properties, surface plasmons, nanophotonic and plasmonic applications, nanomaterials engineering in nanoelectronics, fabrication techniques, and applications. It presents the structure properties and device applications of carbon nanotubes, graphene and silicene. The book further includes the topics on perovskites and applications, quantum dots for optoelectronic, sensing devices, computing applications and advanced applications in diagnostic and therapeutic tools.

CRC Press

Market: Electrical Engineering

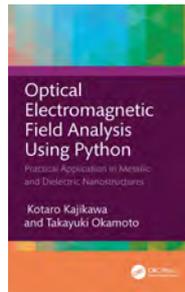
October 2025: 234x156: 280pp: 37 illus, 6 halftones, 31 line drawings

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Optical Electromagnetic Field Analysis Using Python

Practical Application in Metallic and Dielectric Nanostructures



Kotaro Kajikawa and Takayuki Okamoto

In this book, Kajikawa and Okamoto explain how to use Python to calculate and visualize the optical response of microscopic structures and systems. Throughout, the authors provide varied examples to instruct readers in the application of theoretical knowledge to real-world scenarios. This book is invaluable for researchers and postgraduate students working in the fields of optics and photonics. Additionally, the contents are useful not only for those conducting electromagnetic field analysis but also those simulating physical, chemical, and biological phenomena.

CRC Press

Market: Electromagnetic Field Analysis

July 2025: 234x156: 268pp: 66 illus, 66 line drawings

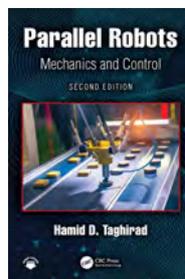
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TEXTBOOK • 2nd Edition

Parallel Robots

Mechanics and Control



Hamid D. Taghirad, K.N. Toosi University of Technology, Tehran, Iran

In today's rapidly evolving industrial landscape, robotics has become essential for meeting the demands of large-scale production. Parallel robots, with their closed-loop kinematic structures, offer unmatched precision, rigidity, and load-bearing capabilities, making them indispensable for tasks requiring high accuracy and efficiency. This book explores the unique advantages of parallel robots, providing a comprehensive resource for engineers, researchers, and students interested in mastering their design, analysis, and control.

CRC Press

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September 2025: 254x178: 612pp: 281 illus, 8 halftones, 273 line drawings

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Purple Plague in Microelectronics



Syed Sajid Ahmad and Richard C. Blish II

This book is a comprehensive overview of the discoveries in composition, growth and control of gold-aluminum intermetallic compounds in microelectronic interconnects. It focuses on the history of detection, theory and understanding of the gold/aluminum interface reliability issues. This book is intended for electronic assembly engineers, design engineers, assembly process development engineers, material scientists, electronic industry supervisors and managers. It is an excellent reference for anyone responsible for defect control and reliability in gold wirebonding.

CRC Press

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TEXTBOOK • 2nd Edition

Real-Time Embedded Systems with Open-Source Operating Systems



Ivan Cibrario Bertolotti, National Research Council of Italy, Institute of Electronics, Computer and Telecommunication Engineering, Turin, Italy and Gabriele Manduchi, National Research Council of Italy (Institute of Ionized Gases), University of Padova

This book aims to provide readers with hands-on knowledge about real-time operating systems and their possible application in the embedded systems domain to streamline, simplify, and make software development more efficient, without requiring any significant previous experience with them. A thorough presentation of operating system-based programming techniques is especially important because they enjoy an ever-increasing popularity in the embedded systems domain

but are often misunderstood, because they still lack comprehensive support in the scientific and technical literature.

CRC Press

Market: Power Engineering

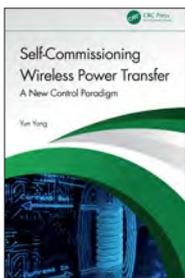
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Pb: 978-1-032-97651-8: **£49.99**

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Self-Commissioning Wireless Power Transfer

A New Control Paradigm



Yun Yang, Nanyang Technological University, Singapore

This accessible guide describes the design and implementation of new front-end monitoring and control strategies for wireless power transfer (WPT). The new control paradigm moves all receiver-side controllers to the transmitter side to enable multiple advantages over conventional designs. Researchers working on WPT technologies within academia and industry will benefit immensely from the discussions within this book, as will graduate students aiming to increase their knowledge on control schemes for power converters at the transmitter sides and primary-side control for transmitter-side inverters.

CRC Press

Market: Electrical Engineering

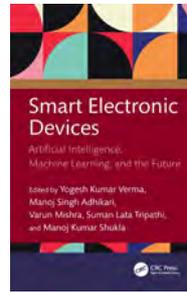
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Smart Electronic Devices

Artificial Intelligence, Machine Learning, and the Future



Edited by Yogesh Kumar Verma, Lovely Professional University, Jalandhar, Punjab, Manoj Singh Adhikari, Lovely Professional University, Jalandhar, India, Varun Mishra, Graphic Era University, India, Suman Lata Tripathi, LPU, India and Manoj Kumar Shukla, Symbiosis Institute of Technology Pune, Symbiosis International University, India

The book analyzes the use of smart medical devices that use artificial intelligence and machine learning to analyze medical images, detect diseases, and assist in diagnosis. It further focuses on real-world applications of artificial intelligence and machine learning in smart electronic devices, demonstrating how these technologies are being used in various industries, such as healthcare, automotive, finance, and consumer electronics.

CRC Press

Market: Electrical Engineering

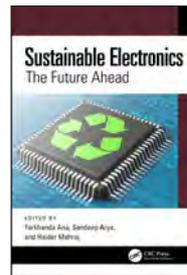
July 2025: 234x156: 315pp: 154 illus, 39 halftones, 115 line drawings

Hb: 978-1-032-85406-9: **£120.00**

★ For full contents and more information, visit: www.routledge.com/9781032854069

Sustainable Electronics

The Future Ahead



Edited by Farkhanda Ana, Department of Ece, SOET, BGSB University, India, Sandeep Arya, University of Jammu, India and Haider Mehraj, BGSB University, India

The reference text focuses on the principles of designing sustainable electronics, including considerations for reducing the environmental impact of electronics during the design phase. It covers topics such as product life cycle assessment, eco-design, and green materials selection. The book discusses the development and use of sustainable materials in electronics, such as biodegradable and renewable materials. It is primarily written for senior undergraduates, graduate students, and academic researchers in the fields of electrical engineering,

electronics and communications engineering, energy, environmental engineering, and electronic materials and devices.

CRC Press

Market: Electrical Engineering

July 2025: 234x156: 376pp: 85 illus, 19 halftones, 66 line drawings

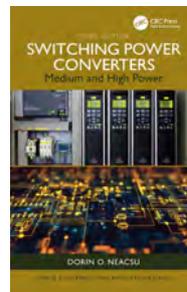
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3rd Edition

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Medium and High Power



Dorin O. Neacsu, Woburn, Massachusetts, USA

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Market: Electrical Engineering

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Hb: 978-1-032-97073-8: **£140.00**

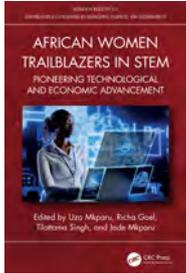
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INDUSTRIAL, MANUFACTURING AND MECHANICAL ENGINEERING

African Women Trailblazers in STEM

Pioneering Technological and Economic Advancement



Edited by **Uzo Mkpuru, Richa Goel**, SCMS, Symbiosis International deemed University, IN, **Tilottama Singh**, Assoc. Prof., Uttaranchal Inst. of Mgmt., Uttaranchal University, IN and **Jade Mkpuru**

Series: *Women in Industry 4.0*

Despite recent advancements, gender disparities in STEM disciplines remain a major concern worldwide, particularly in Africa. Africa possesses a vast pool of untapped STEM talent among women and this book aims to support women in entering and thriving in STEM careers, leading to a more diverse and dynamic workforce. This book can educate stakeholders and policymakers on the importance of funding programs that

promote gender equality and women's participation in STEM fields. By offering evidence-based recommendations, the book can influence policy decisions aimed at creating more inclusive and supportive environments for women in STEM education and professions.

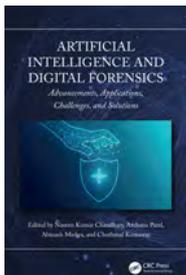
CRC Press

Market: Engineering - Industrial Engineering and Manufacturing
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Artificial Intelligence and Digital Forensics

Advancements, Applications, Challenges, and Solutions



Edited by **Naveen Kumar Chaudhary, Archana Patel**, National Forensic Sciences Univ, India, **Abinash Mishra** and **Chothmal Kumawat**

Artificial Intelligence (AI) has revolutionized digital forensics, bringing previously unheard-of powers to this field. This book explores the advancements, applications, challenges, and solutions that AI brings to the realm of digital forensics. This book caters to industry professionals from diverse backgrounds, including engineering, data science, computer science, law enforcement, and legal experts, fostering a holistic understanding of the subject along with providing practical insights and real-world examples.

CRC Press

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Digital Twinning for Discrete Manufacturing



Edited by **Haiyan Zhao, Ghulam Hussain, Ghulam Abbas**, GIK Institute of Engineering Sciences and Techology, Pakistan and **Khalid Rahman**

This book addresses the Digital Twinning of manufacturing processes, cells, and systems and attempts to bring in the basic characteristics of the 4th Industrial Revolution along with an emphasis on Cyber-Physical Systems. *Digital Twinning for Discrete Manufacturing* discusses how to maximize the use of the pillars of Industry 4.0 and 5.0 in discrete manufacturing. It presents how Digital Twinning has a very special characteristic that can be applied in the training of novice workers on expensive equipment. Digital Twinning is currently an advanced topic that is of interest to researchers,

postgraduates, graduates, senior undergraduates, as well as professionals.

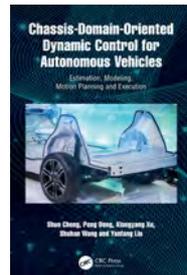
CRC Press

Market: Engineering - Industrial Engineering and Manufacturing
November 2025: 234x156: 288pp: 86 illus, 31 halftones, 55 line drawings
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Chassis-Domain-Oriented Dynamic Control for Autonomous Vehicles

Estimation, Modeling, Motion Planning and Execution



Edited by **Shuo Cheng**, Nanyang Technological University, **Peng Dong**, School of Transportation Science and Engineering, Beihang University, **Xiangyang Xu**, School of Transportation Science and Engineering, Beihang University, **Shuhan Wang**, School of Transportation Science and Engineering, Beihang University and **Yanfang Liu**, School of Transportation Science and Engineering, Beihang University

Over seven detail-rich chapters, this book comprehensively describes autonomous vehicle chassis modeling and control, chassis domain dynamic control, the estimation of essential dynamic states, research on motion planning, the development of chassis coordinated control, and related topics. This is a vital guide for readers from various expertise backgrounds. Advanced undergraduate and postgraduate students who study vehicle engineering will benefit from the descriptions of theoretical foundations and practical methodologies. Engineers and researchers will also benefit from the unique insight into modeling and control technologies for autonomous vehicles.

CRC Press

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September 2025: 234x156: 188pp: 105 illus, 20 halftones, 85 line drawings
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★ For full contents and more information, visit: www.routledge.com/9781032952536

Digital Daily Management

Transforming Data to Improvement



Edited by **Joachim Metternich, Marvin Müller**, Customer Success Manager at SFM Systems GmbH., Darmstadt, Deutschland, Germany, **Christian Hertle**, Founder, CEO, and Managing Director of SFM Systems GmbH., Darmstadt, Deutschland, Germany, **Lukas Longard**, Chief Engineer and Doctoral Student, Institute of Production Management, Technology, and Machine Tools (PTW), Technical University of Darmstadt, Germany and **Yuxi Wang**, Research Assistant and Doctoral Candidate, Institute of Production Management, Technology, and Machine Tools (PTW), Technical University of Darmstadt, Germany

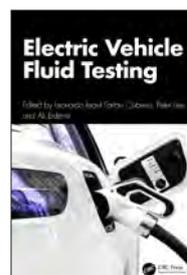
Daily Management (DM) is a structured method that empowers managers and employees to establish a team-based, continuous improvement process. *Digital Daily Management* takes these principles to the next level by leveraging digital solutions. This book simplifies the process, making it easy to understand and implement. Production managers, lean managers, operations managers, researchers, and students will appreciate the step-by-step instructions on how to introduce digital daily management to further strengthen an organization's problem-solving ability.

CRC Press

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Pb: 978-1-041-01004-3: **£49.99**

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Electric Vehicle Fluid Testing



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CRC Press

Market: Automotive Engineering / Lubrication Engineering
November 2025: 234x156: 228pp: 122 illus, 106 halftones, 16 line drawings
Hb: 978-1-032-80213-8: **£110.00**

★ For full contents and more information, visit: www.routledge.com/9781032802138

Engineering the Circular Economy

Leveraging Fuzzy Logic for Implementation



Edited by **Biswadip Basu Mallik**, Institute of Engineering and Management, India, **Gunjan Mukherjee**, Brainware University, India, **Rahul Kar**, Kalyani Mahavidyalaya, India and **Youqing Fan**

Series: Sustainable Industrial Engineering and Management Systems

Implementing the circular economy necessitates innovative approaches capable of managing the complexity and uncertainty inherent in the shift from linear to circular systems. Fuzzy logic, a computational approach inspired by human reasoning, provides a framework for navigating these complexities. With its forward-thinking approach and focus on

practical applications, this book is an essential resource for practitioners, researchers, engineers, scholars, and policymakers looking to promote innovation and sustainability in today's rapidly changing economic and environmental-conscious environment.

CRC Press

Market: Engineering - Industrial and Manufacturing Engineering

September 2025: 234x156: 272pp: 44 illus, 5 halftones, 39 line drawings

Hb: 978-1-032-88560-5: **£99.99**

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Green Manufacturing

Challenges and Applications



Edited by **Shanmugam Suresh Kumar**, Kalasalingam Academy of Research and Education, India and **Sundaresan Thirumalai Kumaran**, Kalasalingam University

The text begins by discussing the green technologies for modern manufacturing, innovative technologies for sustainable manufacturing, implementation, and analysis of clean energy. It further explains topics including lean manufacturing, additive manufacturing for sustainable design and production, properties and applications of renewable biocomposites, and nature-inspired biomaterials. It is primarily written for senior undergraduates, graduate students, and academic researchers in the fields of manufacturing engineering, production engineering, industrial engineering, mechanical engineering, and aerospace engineering.

CRC Press

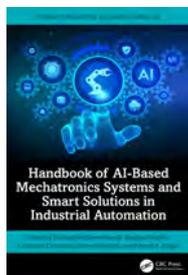
Market: Manufacturing Engineering

July 2025: 234x156: 362pp: 58 illus, 17 halftones, 41 line drawings

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Handbook of AI-Based Mechatronics Systems and Smart Solutions in Industrial Automation



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This handbook focuses on system automation, predictive analysis, preventive analysis, and real-time decision-making systems for next-generation automation. It discusses the advancements of mechatronics systems using AI applications along with the global approach toward smart industrial automation and presents the impact of AI on today's work of autonomous and industrial automation. The book discusses

future research potential and is beneficial to manufacturing, healthcare, and finance disputes, while it offers AI algorithms to analyze large amounts of data and identifies patterns, trends, and anomalies for accurate predictions and optimization processes.

CRC Press

Market: Engineering - Industrial Engineering and Manufacturing

September 2025: 234x156: 283pp: 102 illus, 40 halftones, 62 line drawings

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Industry 4.0 and Intelligent Manufacturing Technologies



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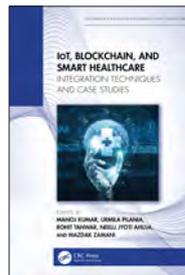
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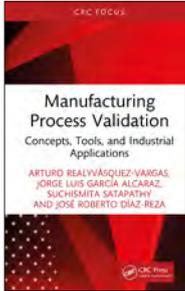
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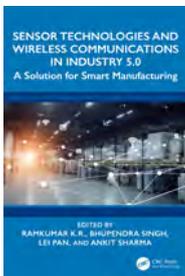
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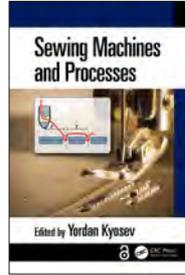
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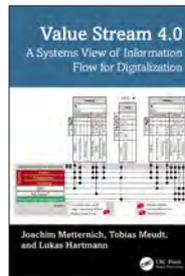
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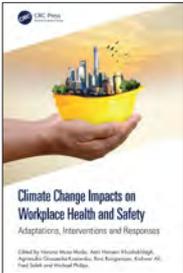
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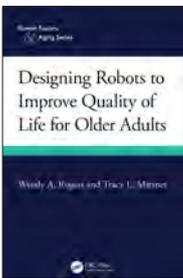
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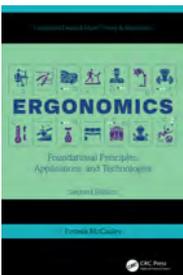
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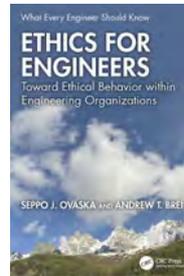
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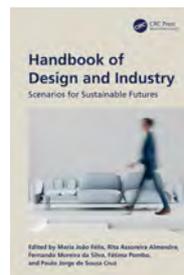
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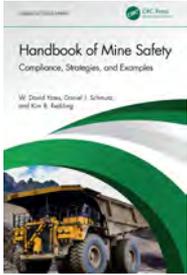
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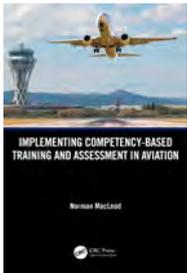
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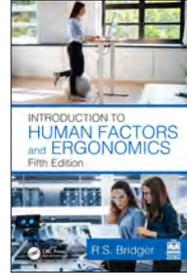
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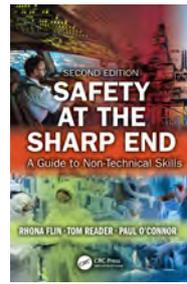
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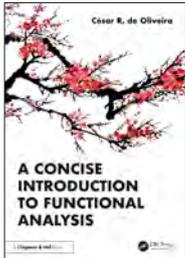
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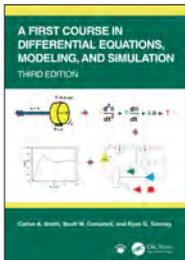
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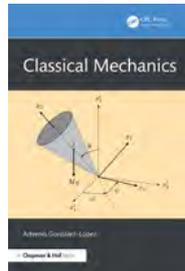
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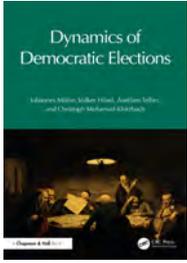
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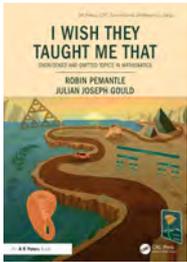
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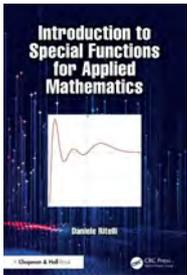
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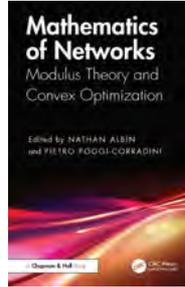
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August 2025: 234x156: 402pp: 45 illus, 45 line drawings

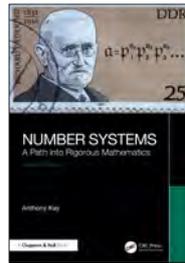
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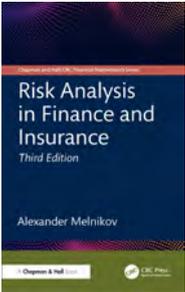
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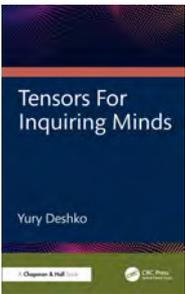
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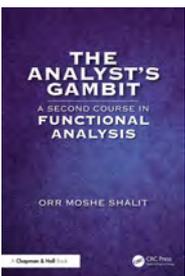
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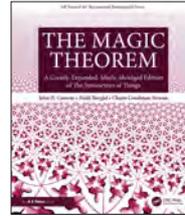
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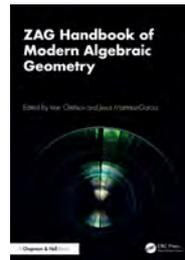
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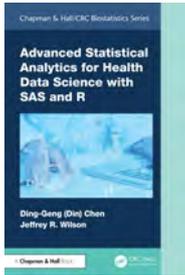
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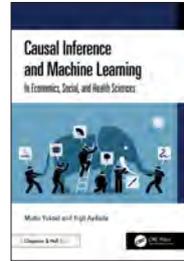
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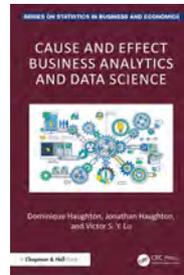
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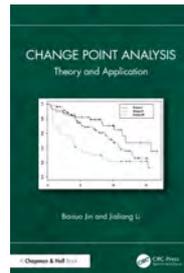
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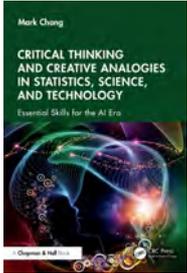
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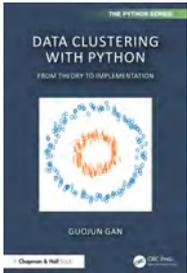
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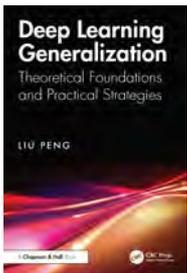
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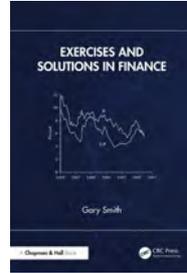
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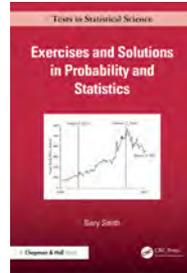
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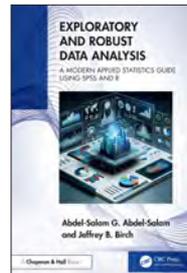
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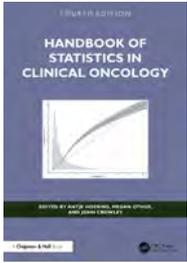
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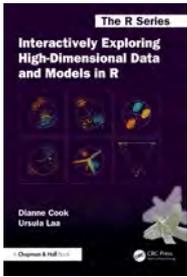
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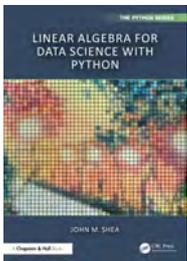
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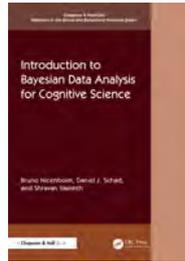
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Alice Paul, Brown University, U.S.A

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Market: Statistics

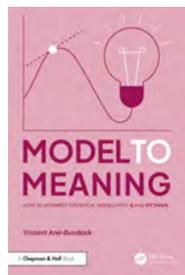
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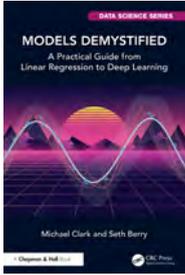
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Chapman and Hall/CRC

Market: Statistics

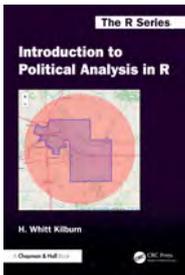
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This book is a practical resource for analysts, data scientists, health researchers, and others looking to make informed, data-driven decisions in healthcare.

Chapman and Hall/CRC

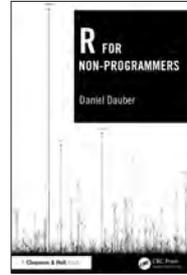
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Chapman and Hall/CRC

Market: Statistics

August 2025: 234x156: 186pp: 63 illus, 63 line drawings

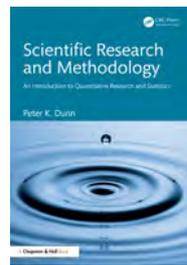
Hb: 978-1-032-91269-1: **£79.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032912691

TEXTBOOK

Scientific Research and Methodology

An Introduction to Quantitative Research and Statistics



Peter K. Dunn, Associate Professor, Uni of Sushine Coast.

This textbook is designed for teaching quantitative research in the scientific, health and engineering disciplines at first-year undergraduate level, with an emphasis on statistics. It covers the research process, including asking research questions, research design, data collection, summarising data, analysis and communication. Statistical topics include numerical summary methods (such as means, odds ratios and identification of outliers), graphing (such as histograms, case-profile plots and scatterplots), confidence intervals and hypothesis testing. Almost every dataset used is a real dataset, and is available online or in an associated R package SRMData.

Chapman and Hall/CRC

Market: Statistics

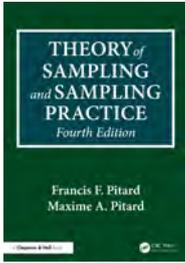
August 2025: 254x178: 557pp: 261 illus, 261 line drawings

Hb: 978-1-032-49672-6: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032496726

4th Edition

Theory of Sampling and Sampling Practice



Francis F. Pitard and Maxime A. Pitard

A step-by-step guide for anyone challenged by the many subtleties of sampling particulate materials. The only comprehensive document merging the famous works of P. Gy, I. Visman, and C.O. Ingamells into a single theory in a logical way - the most advanced book on sampling that can be used by all sampling practitioners around the world.

Chapman and Hall/CRC

Market: statistics

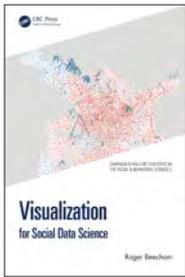
November 2025: 254x178: 552pp: 304 illus, 304 line drawings

Hb: 978-1-032-83008-7: **£190.00**

Prev. Ed Hb: 978-1-138-47648-6

★ For **full contents** and more information, visit: www.routledge.com/9781032830087

Visualization for Social Data Science



Roger Beecham, University of Leeds, Yorkshire, UK

Series: *Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

The book provides end-to-end skills in visual data analysis. It demonstrates how data graphics and modern statistics can be used in tandem to process, explore, model and communicate data-driven social science. It is packed with detailed data analysis examples, pushing you to do visual data analysis. As well as introducing, and demonstrating with code, a wide range of data visualizations for exploring patterns in data, the book shows how models can be integrated with graphics to emphasise important structure and de-emphasise spurious structure and the role of data graphics in scientific communication -- in building trust and integrity.

Chapman and Hall/CRC

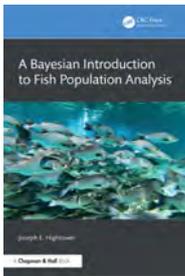
Market: Statistics

August 2025: 234x156: 216pp: 80 illus, 80 line drawings

Pb: 978-1-032-25971-0: **£52.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032259710

A Bayesian Introduction to Fish Population Analysis



Joseph E. Hightower, NC State University, U.S.A

Series: *Chapman & Hall/CRC Applied Environmental Statistics*

A Bayesian Introduction to Fish Population Analysis is aimed at advanced undergraduate and graduate students as well as working professionals interested in a hands-on introduction to Bayesian approaches for fitting fisheries models. Chapters address key aspects of population dynamics: abundance, mortality, growth, and recruitment. The book includes complete R code for simulating each study design and JAGS Bayesian code for model fitting; code files are also available online. No prior knowledge of R or JAGS is assumed and new commands are introduced gradually through the sequence of examples.

Chapman and Hall/CRC

Market: Statistics

August 2025: 216pp, 21 illus

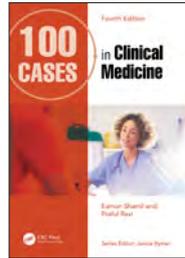
Pb: 978-1-032-84090-1: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032840901

GENERAL MEDICINE

TEXTBOOK • 4th Edition

100 Cases in Clinical Medicine



Eamon Shamil and Pratul Ravi

Series: *100 Cases*

100 Cases in Clinical Medicine presents 100 scenarios commonly seen by medical students and junior doctors in the emergency or outpatient department, on the ward, or in the community setting. Each case begins with a succinct summary of the patient's history, examination, and initial investigation. The text includes photographs where relevant and questions on the diagnosis and management of each case. The answers provide a detailed discussion on each topic, with further illustration where appropriate.

CRC Press

Market: Medicine

July 2025: 246x174: 310pp: 47 illus, 40 halftones, 7 line drawings

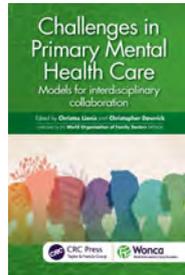
Pb: 978-1-032-36379-0: **£26.99**

Prev. Ed Pb: 978-1-4441-7429-8

★ For **full contents** and more information, visit: www.routledge.com/9781032363790

Challenges in Primary Mental Health Care

Models for Interdisciplinary Collaboration



Edited by **Christos Lionis**, University of Crete, Greece and **Christopher Dowrick**

This insightful book equips family doctors and primary health care professionals with essential knowledge to address crucial challenges in primary mental health care, including COVID-19 impacts, thanatophobia, humanitarian catastrophes, and climate change effects. The book serves as an essential resource for primary care practitioners across all geographical settings, including family doctors, mental health specialists, psychiatrists, psychologists, and nurses working in low-, middle-, and high-income settings, particularly those dealing with remote consultations and seeking guidance on self-care while facing unprecedented professional pressures.

CRC Press

Market: Medicine

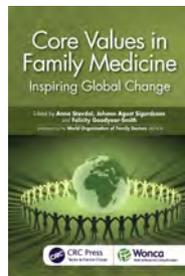
September 2025: 234x156: 208pp: 6 illus, 6 line drawings

Pb: 978-1-032-75426-0: **£28.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032754260

Core Values in Family Medicine

Inspiring Global Change



Edited by **Anna Stavdal**, **Johann Agust Sigurdsson** and **Felicity Goodyear-Smith**

Series: *WONCA Family Medicine*

This new book explores the core values of family medicine nationally, regionally and globally, to identify if and/or where there is consensus and where these diversify in relation to contextual factors. Aligned with the WHO's definition of primary health care and goal of universal health coverage and the United Nation's Sustainable Development Goals, the book documents a global enquiry by teams of experts representing each world region on the vision, mission, core values and principles, and the definition of family medicine in different countries.

CRC Press

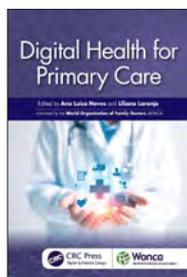
Market: Medicine

August 2025: 234x156: 186pp: 22 illus, 6 halftones, 16 line drawings

Pb: 978-1-032-89328-0: **£28.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032893280

Digital Health for Primary Care

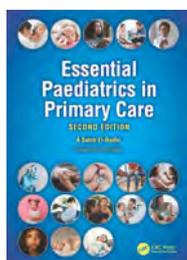


Edited by **Ana Luisa Neves** and **Lilliana Laranjo**
 Series: *WONCA Family Medicine*
 This book provides a comprehensive exploration of the role of digital health technologies in primary care.

CRC Press
Market: Medicine
 August 2025: 234x156: 130pp: 7 illus, 7 line drawings
 Pb: 978-1-041-00563-6: **£28.99**
 ★ For **full contents** and more information, visit: www.routledge.com/9781041005636

2nd Edition

Essential Paediatrics in Primary Care

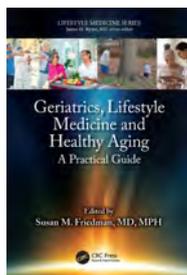


A. Sahib El-Radhi
Essential Paediatrics in Primary Care covers the breadth of paediatric practice, written by with frontline experience of the challenges and dilemmas faced in diagnosing and treating children in primary care. The practical text continues to offer clear, evidence-based guidance about managing children in primary care, including when referral to hospital is appropriate, and has been fully revised and updated in this second edition. The concise, list-based format facilitates a confident and knowledgeable diagnosis to be reached in the short time available in general practice.

CRC Press
Market: Medicine
 August 2025: 246x174: 358pp: 17 illus, 3 halftones, 14 line drawings
 Pb: 978-1-032-60906-5: **£34.99**
 Prev. Ed Pb: 978-1-84619-577-8
 ★ For **full contents** and more information, visit: www.routledge.com/9781032609065

Geriatrics, Lifestyle Medicine and Healthy Aging

A Practical Guide



Edited by **Susan M. Friedman**, University of Rochester, New York, USA
 Series: *Lifestyle Medicine*
Geriatrics, Lifestyle Medicine and Healthy Aging: A Practical Guide is a book for those interested in promoting healthy aging through lifestyle approaches. The book is divided into three sections covering various aspects of lifestyle medicine for older individuals including general concepts of lifestyle medicine practices; lifestyle "pillars" as applied to older adults; and of broad range of target conditions of importance to older adults, and how a lifestyle medicine approach may impact them. Readers gain an understanding of how lifestyle medicine and geriatrics

can work together to provide a holistic approach that fosters healthy aging throughout life.

CRC Press
Market: Medicine
 September 2025: 234x156: 424pp: 22 illus, 2 halftones, 20 line drawings
 Pb: 978-1-032-63288-9: **£52.99**
 ★ For **full contents** and more information, visit: www.routledge.com/9781032632889

Interactive Cases in Emergency Medicine

Learning Through Image Interpretation

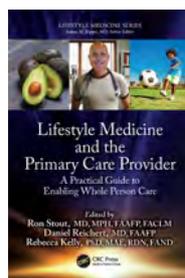


Edited by **Alice Yearwood** and **Dipak Mistry**
 Series: *Interactive Cases Series*
 This innovative book is based on real patients seen in the emergency department of a busy London teaching hospital. Developed from a project designed to offer an online alternative to in person learning during the COVID-19 pandemic, the material will appeal to readers and educators seeking digital content to supplement traditional print-based learning resources. Seventy high-yield cases are illustrated with a variety of static images, including clinical photographs, x-rays and scans, blood films and ECG traces, coupled with integrated imaging videos to enhance understanding.

CRC Press
Market: Medicine
 September 2025: 246x174: 332pp: 101 illus, 93 halftones, 8 line drawings
 Pb: 978-1-032-47984-2: **£29.99**
 ★ For **full contents** and more information, visit: www.routledge.com/9781032479842

Lifestyle Medicine and the Primary Care Provider

A Practical Guide to Enabling Whole Person Care

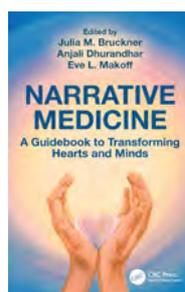


Edited by **Ron Stout**, **Daniel Reichert** and **Rebecca Kelly**
 Series: *Lifestyle Medicine*
Lifestyle Medicine and the Primary Care Provider: A Practical Guide to Enabling Whole Person Care is a comprehensive and practical guide for primary care clinicians seeking to incorporate Lifestyle Medicine (LM) principles into their practice. Edited by Ron Stout, MD, FAAFP, Dan Reichert, MD, FAAFP, and Rebecca Kelly, PhD, RDN, with series oversight from Jim Rippe, MD, this volume offers family physicians and primary care providers a roadmap to enabling lasting health improvements for their patients through whole person, behavior-based care.

CRC Press
Market: Medicine
 July 2025: 254x178: 510pp: 26 illus, 18 halftones, 8 line drawings
 Pb: 978-1-032-64301-4: **£52.99**
 ★ For **full contents** and more information, visit: www.routledge.com/9781032643014

Narrative Medicine

A Guidebook to Transforming Hearts and Minds



Edited by **Julia Michie Bruckner**, **Anjali Dhurandhar** and **Eve L. Makoff**
 Healthcare workers witness immense suffering daily. As receivers of illness stories, they see humans at their most vulnerable. Narrative medicine offers a way to deepen compassion, enhance self-reflection, reduce burnout, and improve patient care. Practical and accessible, this book expands access to narrative medicine, making its principles straightforward and its implementation manageable. Issues of diversity and inclusivity are woven throughout, highlighting often-overlooked voices and those who suffer most.

CRC Press
Market: Medicine
 September 2025: 216x138: 180pp: 19 illus, 19 halftones
 Pb: 978-1-032-83484-9: **£31.99**
 ★ For **full contents** and more information, visit: www.routledge.com/9781032834849

SPECIALIST MEDICINE

9 Essentials for Quality Health Outcomes in Older and High-Risk Patients

An Interprofessional Handbook



Robert S. Vaidya

Healthcare systems today are facing an impending crisis due to increasing numbers of aging and high-risk patients, rising costs, and the challenge of achieving meaningful, lasting patient outcomes. This book provides a fresh perspective on managing complex patients through an interprofessional team-based approach. Unlike traditional books that focus on data-driven tools and clinical algorithms, this book emphasizes the human elements of healthcare, guiding professionals to shift their thinking, improve teamwork, and enhance patient outcomes.

CRC Press

Market: Medicine

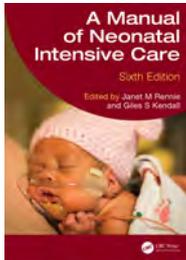
December 2025: 216x138: 200pp: 6 illus, 6 line drawings

Pb: 978-1-041-10450-6: **£30.99**

★ For full contents and more information, visit: www.routledge.com/9781041104506

6th Edition

A Manual of Neonatal Intensive Care



Edited by **Janet M. Rennie** and **Giles S. Kendall**

The sixth edition of this successful and well-regarded book is a useful ready-reference for the practicing pediatrician and nurse and gives invaluable guidance for trainees in pediatrics, neonatology, and neonatal nursing. It provides those working in neonatal intensive care units with precise instructions on the diagnosis and management of common neonatal problems; it has been extensively updated and revised, with emphasis on concision in the background physiology, key references, and explanatory diagrams.

CRC Press

Market: Neonatology

October 2025: 254x178: 374pp: 70 illus, 37 halftones, 33 line drawings

Pb: 978-1-032-51591-5: **£79.99**

Prev. Ed Pb: 978-0-340-92771-7

★ For full contents and more information, visit: www.routledge.com/9781032515915

Severe Community Acquired Pneumonia

Gurmeet Singh

Severe community acquired pneumonia (SCAP) remains a significant threat to global health, causing immense morbidity and mortality. This book explores recent advances in pathogens, host immunity, and antimicrobial resistance. Details on innovative diagnostic techniques, including novel imaging modalities and biomarkers for rapid and accurate diagnosis, provides up-to-date guidance on therapeutic strategies such as FAST HUGS BID, along with palliative care and rehabilitation, supported by case studies.

CRC Press

Market: Medicine

December 2025: 216x138: 184pp: 17 illus, 13 halftones, 4 line drawings

Pb: 978-1-041-04707-0: **£29.99**

★ For full contents and more information, visit: www.routledge.com/9781041047070

AI and Precision Medicine in Infectious Disease Management

Edited by **Jen-Tsung Chen**

Series: *AI in Clinical Practice*

This book presents technical advancements of artificial intelligence (AI)-based technologies and computational biology approaches, highlighting their applications in developing smart healthcare and precision medicine for managing infectious diseases. It discusses cutting-edge AI tools, particularly machine and deep learning models, and generative AI, to assist in disease prediction and prevention, disease surveillance and diagnosis, drug discovery, drug design and development, healthcare, personalized medicine, pharmacology, and vaccine development.

CRC Press

Market: Medicine

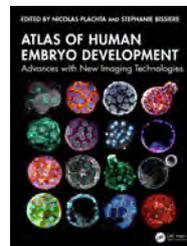
January 2026: 254x178: 248pp: 20 illus, 13 halftones, 7 line drawings

Pb: 978-1-041-01620-5: **£54.99**

★ For full contents and more information, visit: www.routledge.com/9781041016205

Atlas of Human Embryo Development

Advances with New Imaging Technologies



Nicolas D. Plachta and **Stephanie Bissiere**

This exciting atlas shows with unprecedented resolution the development of the human embryo from fertilization to pre-implantation. Technology now captures dynamic subcellular changes driving embryogenesis, allowing the team to move from traditional imaging of fixed specimens or classic light microscopy to seeing, as if in 3D and real time, the process of fertilization, development, and defects. Human embryo research documented here is of paramount importance for reproductive health, advancing fertility treatments, genetic disease prevention, and our understanding of early human development—offering new possibilities for improving reproductive medicine and embryo research.

CRC Press

Market: Reproductive Medicine

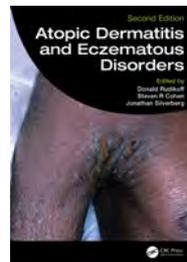
August 2025: 280x210: 120pp: 53 illus, 52 halftones, 1 line drawing

Hb: 978-1-032-71547-4: **£180.00**

★ For full contents and more information, visit: www.routledge.com/9781032715474

2nd Edition

Atopic Dermatitis and Eczematous Disorders



Edited by **Donald Rudikoff**, Chief of Derm., Bronx Lebanon Hospital; Associate Prof. Clinical Med., AECM, Bronx, NY, **Steven R. Cohen**, Prof and Chief, Div. of Derm., AECM, Bronx, NY and **Jonathan Silverberg**

This updated and revised edition gives the clinician a comprehensive review of the different clinical presentations of eczematous disorders, their associated pathophysiology, and treatments. The editors have recruited expert contributors for each topic. There are many color photographs, as well as helpful tables with useful guidelines for treatment, so the dermatologist, the pediatrician, the allergist, and the generalist will all find this work a useful clinical reference for daily practice.

CRC Press

Market: Dermatology

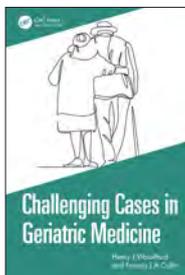
September 2025: 254x178: 320pp: 243 illus, 218 halftones, 25 line drawings

Hb: 978-0-367-46737-1: **£150.00**

Prev. Ed Hb: 978-1-84076-195-5

★ For full contents and more information, visit: www.routledge.com/9780367467371

Challenging Cases in Geriatric Medicine



Edited by **Henry J. Woodford**, Northumbria Healthcare NHS Foundation Trust, UK and **Francis J.A. Collin**

Geriatric medicine is challenging – people present with multiple problems at the same time, and case studies provide a good way to discuss this complexity. This book describes 30 cases of older people with frailty presenting to acute medical services. They cover a wide range of common presentations and management issues and explore the interplay of acute illness, multimorbidity, and physical and cognitive impairments. The book focuses on medicine optimisation, shared decision-making and advance care planning using key test results and imaging studies.

Management options are discussed where disease-specific guidelines may not provide the solution when treating older adults.

CRC Press

Market: Medicine

November 2025: 234x156: 200pp: 42 illus, 33 halftones, 9 line drawings

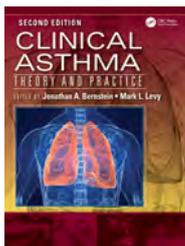
Pb: 978-1-032-94846-1: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781032948461

2nd Edition

Clinical Asthma

Theory and Practice



Edited by **Jonathan A. Bernstein**, University of Cincinnati College of Medicine, Ohio and **Mark L. Levy**, University of Cincinnati College of Medicine, Kenton Bridge Medical Centre; and Edinburgh Univ.

With contributions from a distinguished panel of world-renowned authors, the 2nd edition of *Clinical Asthma: Theory and Practice* presents a comprehensive study of both the common and the more challenging problems faced by healthcare personnel who treat patients with asthma. Reflecting a strong clinical emphasis, each chapter begins with a patient case study supported by essential background information on the basic science and

clinical decision-making process. This is followed by a discussion of clinical evaluation and management. The multidisciplinary coverage explores a range of topics including genetics, inflammation, immunology, and the identification of different endotypes.

CRC Press

Market: Pulmonary Medicine

September 2025: 280x210: 312pp: 49 illus, 20 halftones, 29 line drawings

Hb: 978-1-032-26225-3: **£130.00**

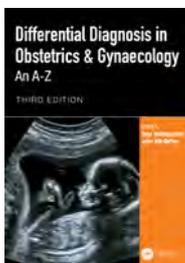
Prev. Ed Hb: 978-1-4665-8561-4

★ For full contents and more information, visit: www.routledge.com/9781032262253

3rd Edition

Differential Diagnosis in Obstetrics & Gynaecology

An A-Z



Edited by **Tony Hollingworth**, Consultant in Obstetrics and Gynaecology, Whipps Cross University Hospital, London and **John A.W. Dalton**

One of the major challenges in obstetrics and gynaecology is the need for a broad knowledge of medicine and surgery as well as specific conditions related to reproduction. This revised and updated edition provides clinicians with invaluable assistance in the diagnostic process to differentiate quickly and correctly among various diseases and disorders presenting in the female patient. From minor to major symptoms, the differential diagnoses are explored and offered in a way that is easy to read and leads to practical management.

CRC Press

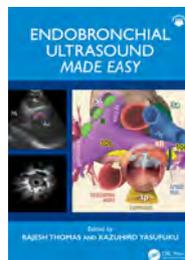
Market: Gynaecology

October 2025: 254x178: 398pp: 189 illus, 162 halftones, 27 line drawings

Pb: 978-1-032-74039-3: **£99.99**

★ For full contents and more information, visit: www.routledge.com/9781032740393

Endobronchial Ultrasound Made Easy



Edited by **Rajesh Thomas** and **Kazuhiro Yasufuku**

This is a concise, yet comprehensive book that teaches all essential aspects of the practice of Endobronchial Ultrasound (EBUS) bronchoscopy. Written by world experts, who share their clinical experience to provide a practical and step-by-step approach to learning and performing linear and radial EBUS bronchoscopy. Supplemented by more than 250+ high-quality illustrations, images and videos selected from the authors' personal collections, all chapters include expert tips, clinical pearls, rare cases and interactive self-assessment sections to enhance and reinforce the learning of both beginner and advanced bronchoscopists wishing to learn, practice and teach EBUS.

CRC Press

Market: Medicine

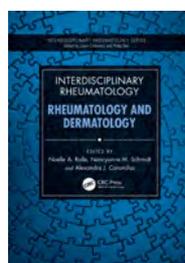
August 2025: 254x178: 262pp: 265 illus, 249 halftones, 16 line drawings

Pb: 978-0-367-63075-1: **£53.99**

★ For full contents and more information, visit: www.routledge.com/9780367630751

Interdisciplinary Rheumatology

Rheumatology and Dermatology



Edited by **Noelle A. Rolle**, **Nancyanne M. Schmidt** and **Alexandra J. Coromilas**

Series: *Interdisciplinary Rheumatology*

Ask rheumatologists what is one of the things that they desire most and they'll often say: I wish I knew more about other areas so I could care for patients whose disease manifestations cross over into other specialties. This is especially true of patients whose rheumatologic conditions have dermatology manifestations or are closely linked to dermatologic disease. The intersection between them lends well to interdisciplinary care, and rheumatologists, dermatologists and primary care physicians have the

opportunity to expand their knowledge through the expertise shared in this book.

CRC Press

Market: Medicine

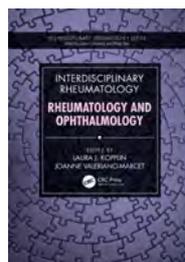
October 2025: 254x178: 192pp: 92 illus, 89 halftones, 3 line drawings

Pb: 978-1-032-62323-8: **£52.99**

★ For full contents and more information, visit: www.routledge.com/9781032623238

Interdisciplinary Rheumatology

Rheumatology and Ophthalmology



Edited by **Laura J. Kopplin** and **Joanne Valeriano-Marcet**

Series: *Interdisciplinary Rheumatology*

Ask rheumatologists what one thing that they most desire is and they will say: I wish I knew more about ophthalmology so I could care for patients whose rheumatologic diseases manifest with ophthalmic complications. Ophthalmologists feel just the same, seeking to understand the implications that autoimmune diseases have for their patients. As part of the Interdisciplinary Rheumatology book series, this book is a dialogue between rheumatologists and ophthalmologists providing a masterclass from world-renowned experts. Led by a team of international editors with in-depth knowledge and cutting-edge research on

topics like vasculitis and systemic lupus erythematosus, among others.

CRC Press

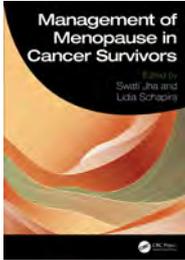
Market: Medicine

July 2025: 254x178: 238pp: 57 illus, 53 halftones, 4 line drawings

Pb: 978-1-032-59231-2: **£52.99**

★ For full contents and more information, visit: www.routledge.com/9781032592312

Management of Menopause in Cancer Survivors



Edited by **Swati Jha** and **Lidia Schapira**

As perceptions of menopause have evolved, this new text examines what clinical problems can arise in treatment of patients experiencing the menopause after cancer treatment. For too long, menopausal symptoms have been undertreated in cancer survivors, leading to suffering and suboptimal health outcomes. From hot flashes to night sweats to mood and sexual concerns, this book provides practical tips for approaching these symptoms in the clinic. It will be an invaluable reference for both gynaecologists and oncologists internationally.

CRC Press

Market: Gynaecology

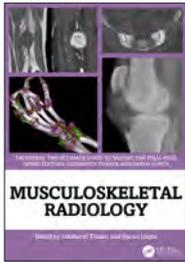
August 2025: 254x178: 162pp: 10 illus, 5 halftones, 5 line drawings

Pb: 978-1-032-62620-8: **£79.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032626208

Musculoskeletal Radiology

An Ultimate Guide to Passing the Final FRCR



Edited by **Siddharth Thaker**, Manchester University Hospitals, UK and **Harun Gupta**, Leeds Teaching Hospitals, UK

Series: *FRCRverse*

This book in the FRCRverse series is dedicated to *Musculoskeletal Radiology*, following the latest RCR curriculum. Section 1 discusses clinical presentations and imaging strategies to help in daily tasks that radiologists and residents face in report rooms and MDTs. Section 2 explores imaging of core pathologies with additional topics such as multisystemic diseases, MSK interventions and sports imaging, along with model SBA questions in each chapter for self-assessment.

CRC Press

Market: Medicine

October 2025: 246x189: 280pp: 293 illus, 291 halftones, 2 line drawings

Pb: 978-1-032-81515-2: **£61.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032815152

Non-Surgical Hair Restoration

A Comprehensive Guide for Doctors



Robert Dorfman

Hair loss is one of the most common conditions encountered in both clinical and aesthetic medicine, and its impact often extends well beyond the physical appearance of patients. While surgical restoration has traditionally garnered the most attention, the field of nonsurgical hair restoration has expanded significantly—driven by advances in molecular biology, the development of new therapeutic modalities, and increasing demand for lower-risk, patient-tailored treatments. This book was written to provide a comprehensive, evidence-based overview of nonsurgical approaches to hair restoration.

CRC Press

Market: Dermatology

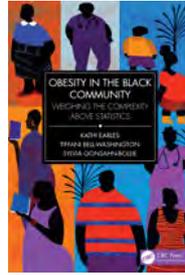
November 2025: 254x178: 184pp: 53 illus, 52 halftones, 1 line drawing

Hb: 978-1-032-70528-6: **£94.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032705286

Obesity in the Black Community

Weighing the Complexity above Statistics



Edited by **Kathi Earles**, **Tiffani Bell-Washington** and **Sylvia Gonsahn-Bollie**

In this ground-breaking book, three leading experts in obesity medicine offer a comprehensive approach to origins, obstacles, and opportunities for addressing obesity in the Black community. Given the complexity of the disease of obesity coupled with the health disparities that unequally affect Black people, there is a dire need for an unbiased resource that provides an authoritative, evidence-based overview. It unprecedentedly unifies the biopsychosocial contributors to obesity and boldly goes beyond quoting statistics to proposing effective solutions for physicians and professionals to implement in their clinical practice.

CRC Press

Market: Medicine

August 2025: 234x156: 196pp: 12 illus, 11 halftones, 1 line drawing

Pb: 978-1-032-62194-4: **£39.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032621944

Obstetric Decisions

Quick Thinking for Safe Deliveries



Edited by **Rhianna Davies** and **Kelsie Sykes**

This is a practical manual on troubleshooting options where there are obstetric complications, so medical staff can check quickly and easily on the essential points they need to know, do, and recommend. *Offers a quick and easy-to-consult reference for essential points *Presents an invaluable guide for those in training who need to make a decision in complicated circumstances *Summarizes its points in boxes, flow-charts, and tables

CRC Press

Market: Gynaecology

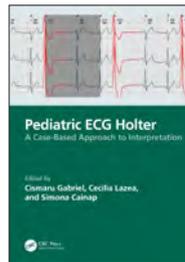
October 2025: 229x152: 160pp: 36 illus, 4 halftones, 32 line drawings

Pb: 978-1-032-82522-9: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032825229

Pediatric ECG Holter

A Case-Based Approach to Interpretation



Edited by **Cismaru Gabriel**, **Cecilia Lazea** and **Simona Cainap**

As arrhythmias may be transient and not seen during the shorter recording times of the standard ECG, ECG Holter monitoring allows the physician to make better-informed decisions for the cardiac patient. Here is a case-by-case teaching exercise in interpreting Holter monitors in the paediatric population. The cases reflect the broad spectrum of paediatric arrhythmias that are most frequently encountered. Paediatric cardiologists, paediatricians, and paediatric cardiac physiologists will develop the expertise to analyse the Holter ECG in children of varying ages.

CRC Press

Market: Medicine

November 2025: 254x178: 232pp: 357 illus, 51 halftones, 306 line drawings

Pb: 978-1-032-89871-1: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032898711

Practical Problems and Approaches in Genetic Counseling

Challenges in the Era of Genomic Medicine



Edited by **Priyanka Ahimaz**

This innovative text aims to help the genetic counselor in training and in practice prepare for the challenges arising in everyday patient scenarios, from genomic medicine, communication challenges, ethical issues, and emerging topics in a fast moving field. *Advises the practitioner on how to pre-empt and tackle problem topics in practice *Tackles new and emerging challenges arising in everyday clinical scenarios *Presents precise and targeted advice in an approachable style

CRC Press

Market: Genetics

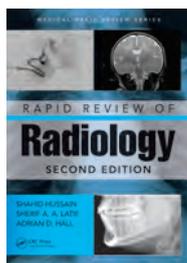
August 2025: 254x178: 122pp: 4 illus, 4 line drawings

Hb: 978-1-032-50302-8: **£145.00**

★ For full contents and more information, visit: www.routledge.com/9781032503028

2nd Edition

Rapid Review of Radiology



Shahid Hussain, Sherif Aaron Abdel Latif and Adrian David Hall

Series: *Medical Rapid Review Series*

Following the recent release of the new Royal College of Radiology Curriculum, the highly successful text, *Rapid Review of Radiology* has been updated and expanded to ensure full coverage of the new curriculum. New technologies from the last 10 years have now been included with new interventional procedures. The book contains 600 images including Cardiac CT, Radiofrequency ablation, Nuclear Medicine, Postmortem CT, and Artificial intelligence. It is of value to radiologists in training and other health professionals wishing to improve their radiological

skills and is the second edition of the bestseller for the FRCR Part 2B exam.

CRC Press

Market: Medicine

October 2025: 376pp: 463 illus, 463 halftones

Pb: 978-1-032-28739-3: **£86.99**

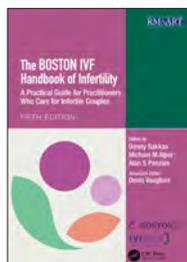
Prev. Ed Pb: 978-1-84076-120-7

★ For full contents and more information, visit: www.routledge.com/9781032287393

5th Edition

The Boston IVF Handbook of Infertility

A Practical Guide for Practitioners Who Care for Infertile Couples



Edited by **Michael M. Alper, Denny Sakkas, Denis Vaughan and Alan S. Penzias**

This new edition of an established go-to reference provides a structured approach to treating the infertile couple that will be of benefit to the gynecologist, reproductive endocrinologist, and reproductive medicine nurse alike. Both clinical and laboratory techniques are included, with material on preconception care and office management.

CRC Press

Market: Reproductive Medicine

October 2025: 254x178: 298pp: 49 illus, 25 halftones, 24 line drawings

Pb: 978-1-032-60703-0: **£110.00**

Prev. Ed Pb: 978-1-4987-8124-4

★ For full contents and more information, visit: www.routledge.com/9781032607030

The Glaucoma Handbook

Evidence-based Clinical Care

Cansu Yüksel Elgin

Glaucoma, the “silent thief of sight,” is one of the leading causes of irreversible blindness. This engaging text unravels the complexities of this multifaceted condition. From the anatomy of the eye and mechanisms of disease to cutting-edge treatments and research, it bridges foundational knowledge with the latest advancements. Through case studies, patient narratives, and a focus on global disparities, it highlights the human impact of glaucoma and the importance of innovation and collaboration in combating it. It is a must-read for clinicians, researchers and students, seeking to deepen their understanding, improve patient outcomes, and explore the future of vision preservation.

CRC Press

Market: Medicine

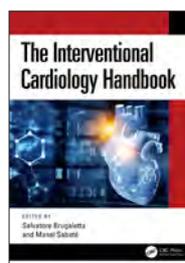
October 2025: 234x156: 192pp: 10 illus, 7 halftones, 3 line drawings

Pb: 978-1-041-08721-2: **£54.99**

★ For full contents and more information, visit: www.routledge.com/9781041087212

The Interventional Cardiology Handbook

Edited by **Salvatore Brugaletta and Manel Sabaté**



This handbook is a practical guide for interventional cardiology procedures, providing a fast-access reference tool to be consulted in daily practice in the cath lab. Interventional cardiology has become a complex speciality, and this book's ‘procedure-oriented’ structure will help readers to deploy diagnostic and management strategies and familiarise themselves with procedures and tools. Written by experts in their fields with passion for their daily work, this must-have handbook is an invaluable resource for practising clinicians, fellows and professionals in every cath lab to understand and perform these complex procedures for safety and efficacy.

CRC Press

Market: Medicine

August 2025: 254x178: 260pp: 159 illus, 144 halftones, 15 line drawings

Pb: 978-1-032-60691-0: **£74.99**

★ For full contents and more information, visit: www.routledge.com/9781032606910

3rd Edition

Transesophageal Echocardiography Multimedia Manual

A Perioperative Transdisciplinary Approach

Edited by **André Denault MD PhD**, Institut de Cardiologie de Montréal, Québec, Canada, **Annette Vegas**, Toronto General Hospital, Ontario, Canada, **Pierre Couture**, **Marco Julien**, **Etienne Couture**, **Jean Buithieu** and **Jean-Claude Tardif**, Institut de Cardiologie de Montréal, Québec, Canada

The third edition of the *Transesophageal Echocardiography Multimedia Manual* is a comprehensive resource and essential guide to the rapidly expanding field of perioperative transesophageal echocardiography (TEE), encompassing its role in newer cardiac surgery techniques, diverse interventional procedures, and the intensive care unit. This well-illustrated manual, accompanying videos and self-test questions demonstrate recent developments and challenges for the anesthesiologist, cardiologist, cardiac surgeon, critical care physician, and those interested in perioperative TEE.

CRC Press

Market: Medicine

December 2025: 280x210: 704pp: 892 illus, 824 halftones, 68 line drawings

Hb: 978-1-032-42460-6: **£190.00**

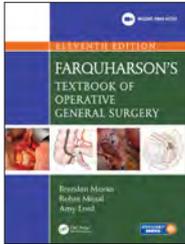
Prev. Ed Hb: 978-1-4200-8070-4

★ For full contents and more information, visit: www.routledge.com/9781032424606

SURGERY

11th Edition

Farquharson's Textbook of Operative General Surgery



Edited by **Brendan Moran**, FRCSI, Consultant Surgeon, Hampshire Hospitals Foundation Trust, Basingstoke, UK, **Rohin Mittal** and **Amy Lord**

The 11th edition of *Farquharson's* continues to provide both the fundamental surgical skills needed by trainee surgeons and the general surgical subspecialty knowledge necessary for higher surgical training. Junior surgeons often need an overview of the whole patient, and even experienced surgeons occasionally need to operate outside their area of expertise, so each chapter's specialist authors have focused their topic on principles for the general surgeon, bridging the gap between general and specialty surgery. This classic, concise textbook will benefit all General Surgeons, whether already well-established, or just embarking on their career in surgery.

CRC Press

Market: Surgery

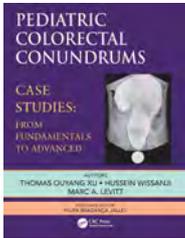
November 2025: 280x210: 600pp: 615 illus, 597 halftones, 18 line drawings

Pb: 978-1-032-37571-7: **£79.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032375717

Pediatric Colorectal Conundrums

Case Studies: From Fundamental to Advanced



Marc A. Levitt, Nationwide children's hospital - center for colorectal and pelvic reconstruction, Columbus, Ohio, USA

Edited by **Thomas Xu** and **Hussein Wissanji**

Associate Editor **Filipa Braganca Jalles**

Series: *Pediatric Colorectal Surgery*

The case-based approach of this innovative and engaging text on pediatric colorectal surgery reflects the experience of the team at the Children's National Hospital, Washington, DC and contributions from pediatric surgeons around the world. Patients with anorectal malformations, Hirschsprung disease,

fecal incontinence from a variety of conditions, colonic motility disorders, amongst other conditions require pediatric colorectal and pelvic reconstruction. Such patients require care from specialisms, including colorectal surgery, urology, gynecology, and GI motility.

CRC Press

Market: Medicine

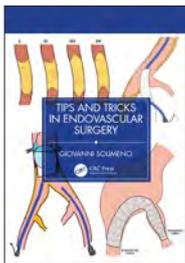
November 2025: 246x189: 190pp: 313 illus, 280 halftones, 33 line drawings

Pb: 978-1-032-78036-8: **£54.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032780368

Tips and Tricks in Endovascular Surgery

A "How to" Guide for Reaching The Next Level in Endovascular Surgery



Giovanni Solimeno

Illustrated with detailed diagrams and step-by-step procedures, this is a key resource for mastering the art and science of endovascular surgery. From basic interventions to the most challenging cases, readers are guided through the minutiae of techniques that are often learned through trial and error.

Illustrated with detailed diagrams and step-by-step procedures, this valuable resource helps clinicians master the art and science of endovascular surgery. Endovascular surgeons, interventional radiologists, and interventional cardiologists are able to stay abreast of the latest techniques and understand how to apply them effectively in clinical practice.

CRC Press

Market: Medicine

November 2025: 234x156: 320pp: 349 illus, 24 halftones, 325 line drawings

Pb: 978-1-032-93671-0: **£64.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032936710

VETERINARY MEDICINE

A Compassionate Calling

What It Really Means to Be a Veterinarian



Marie Holowaychuk

A Compassionate Calling offers an unflinching and deeply personal look into the realities of the veterinary profession. Dr. Marie Holowaychuk weaves candid personal stories with evidence-based insights from published research. In 40 concise and thought-provoking chapters, she explores the hidden curriculum of veterinary school, the toll of on-call work, the emotional impact of euthanasia, the challenges of practicing during a pandemic, and many other important topics. Marie also tackles pressing issues like diversity, equity, inclusion, and the evolving dynamics of pet insurance and corporatization in veterinary medicine.

CRC Press

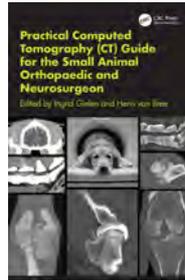
Market: Veterinary Medicine

August 2025: 234x156: 320pp: 8 illus, 8 halftones

Pb: 978-1-032-38903-5: **£19.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032389035

Practical Computed Tomography (CT) Guide for the Small Animal Orthopaedic and Neurosurgeon



Edited by **Ingrid Gielen**, Ghent University, Merelbeke, Belgium and **Henri van Bree**, Ghent University, Merelbeke, Belgium

More clinics and large practices are investing in Computed Tomography (CT) equipment, meaning veterinary surgeons are often confronted with unfamiliar technical challenges like positioning and handling of the equipment. Even after obtaining the CT images, the interpretation can often be confusing. Split into two parts, looking first at the principles of CT and then drilling down to specific procedures by body region, this book is packed with over 200 high quality images, practical protocols and easy-to-locate information. It provides much needed support in choosing the right equipment, providing the exact

protocol and coming to a final diagnosis.

CRC Press

Market: Veterinary Medicine

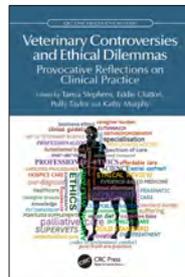
December 2025: 254x178: 392pp: 466 illus, 450 halftones, 16 line drawings

Hb: 978-1-4822-2588-4: **£130.00**

★ For **full contents** and more information, visit: www.routledge.com/9781482225884

Veterinary Controversies and Ethical Dilemmas

Provocative Reflections on Clinical Practice



Edited by **Tanya Stephens**, Haberfield Veterinary Hospital, **Eddie Clutton**, Edinburgh University, **Polly Taylor**, Topcat Metrology Ltd and **Kathy Murphy**, Barking Brains Ltd.

Series: *CRC One Health One Welfare*

This book identifies increasing concerns with the veterinary profession and confronts them provocatively, with a view to stimulating positive change. With experienced contributors from around the world, each chapter combines personal story with evidence-based reflections. The book identifies key concerns with the profession's current trajectory and presents them with candour, from the perspective of concerned veterinarians. Ideal for use within the veterinary curriculum to stimulate

undergraduate thought and discussion, this book will also be a valuable reference for practitioners as the veterinary profession comes to terms with life in a post-truth era.

CRC Press

Market: Veterinary Medicine

September 2025: 229x152: 434pp: 9 illus, 3 halftones, 6 line drawings

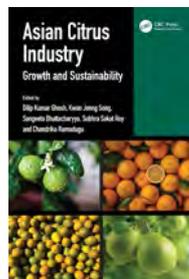
Pb: 978-1-032-57986-3: **£29.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032579863

AGRICULTURE & FOOD SCIENCE AND NUTRITION

Asian Citrus Industry

Growth and Sustainability



Edited by **Dilip Kumar Ghosh, Kwan Jeong Song, Sangeeta Bhattacharyya, Subhra Saikat Roy and Chandrika Ramadugu**

The citrus industry plays a crucial role in the economies and agricultural landscapes of many Asian countries, contributing significantly to global citrus production and trade. *Asian Citrus Industry: Growth and Sustainability* provides a comprehensive analysis of the citrus sector across 14 major citrus-producing Asian nations, including China, India, Japan, Korea, Thailand, Bhutan, Nepal, Turkey, Pakistan, Bangladesh, Vietnam, Iran, Sri Lanka, and Indonesia. This book presents an in-depth exploration of the historical evolution, production trends, key challenges, and opportunities shaping the citrus industry in Asia.

CRC Press

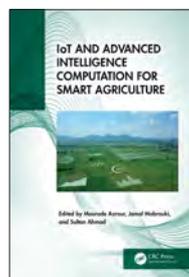
Market: Agriculture

October 2025: 254x178: 320pp: 189 illus, 148 halftones, 41 line drawings

Hb: 978-1-032-89466-9: **£190.00**

★ For full contents and more information, visit: www.routledge.com/9781032894669

IoT and Advanced Intelligence Computation for Smart Agriculture



Edited by **Mourade Azrou, Moulay ismail University of Meknes, Morocco, Jamal Mabrouki and Sultan Ahmad**

Smart agriculture is an approach to maintaining nature without compromising the basic needs of future generations, while at the same time improving the efficiency of farming. The main achievements of smart agriculture in terms of sustainable agriculture are crop rotation, controlling nutrient deficiencies in crops, pest and disease control, recycling, and water harvesting, leading to a safer environment overall. Living organisms depend on the nature of biodiversity and are exposed to pollution due to waste emissions, use of fertilizers and pesticides, degraded dead plants, etc.

CRC Press

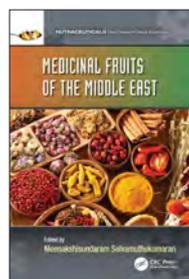
Market: Agriculture / Artificial Intelligence

August 2025: 234x156: 240pp: 51 illus, 10 halftones, 41 line drawings

Pb: 978-1-032-86466-2: **£48.99**

★ For full contents and more information, visit: www.routledge.com/9781032864662

Medicinal Fruits of the Middle East



Edited by **Meenakshisundaram Selvamuthukumar, School of Agriculture, Joy University**

Series: Nutraceuticals

Medicinal plants, including fruits, contain bioactive components which present health benefits for humans. There are several medicinal fruits including jack fruit, pomegranate, date palm, papaya, and lemons grown commercially in countries throughout the Middle East. *Medicinal Fruits of the Middle East* explores this subject by featuring information on bioactive properties, extraction techniques, natural colorants, nutraceutical preparations, and traditional food preparations of these unique, medicinal fruits.

CRC Press

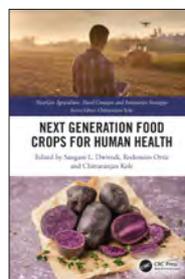
Market: Food Science and Nutrition

August 2025: 234x156: 210pp: 28 illus, 7 halftones, 21 line drawings

Hb: 978-1-032-58942-8: **£190.00**

★ For full contents and more information, visit: www.routledge.com/9781032589428

Next Generation Food Crops for Human Health



Edited by **Sangam L. Dwivedi, Rodomiro Ortiz**, Swedish University of Agricultural Sciences, Sweden and **Chittaranjan Kole**

Series: Nextgen Agriculture

Next Generation Food Crops for Human Health delves into the advances in genetic and genomic research that are revolutionizing the development of productive, nutrient-dense food crops. It presents insights into tools including high-throughput phenomics, DNA sequencing, and genomic selection, which enable scientists to discover functionally characterized genes and enhance staple crops such as grains, legumes, fruits, vegetables, and oil crops. By leveraging these technologies, researchers are creating a new generation of foods that optimize essential nutrients, from complex carbohydrates and proteins to vitamins and bioactive compounds.

CRC Press

Market: Agriculture and Food Science

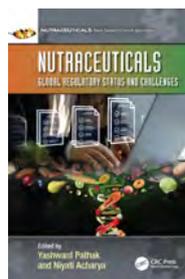
September 2025: 234x156: 320pp: 6 illus, 4 halftones, 2 line drawings

Hb: 978-1-032-73908-3: **£170.00**

★ For full contents and more information, visit: www.routledge.com/9781032739083

Nutraceuticals

Global Regulatory Status and Challenges



Edited by **Yashwant V. Pathak**, USF, USA and **Niyati Acharya**

Series: Nutraceuticals

The global nutraceutical and health supplement market is experiencing unprecedented growth, driven by increasing consumer awareness and evolving healthcare needs. *Nutraceuticals: Global Regulatory Status and Challenges* provides a comprehensive overview of global regulatory frameworks, empowering professionals to understand and comply with varying standards. From ingredient approval to labeling requirements, this book offers critical insights into key markets, as well as emerging markets.

CRC Press

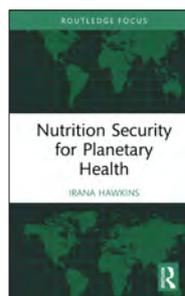
Market: Food Science and Nutrition

August 2025: 254x178: 362pp: 43 illus, 10 halftones, 33 line drawings

Hb: 978-1-032-72984-8: **£190.00**

★ For full contents and more information, visit: www.routledge.com/9781032729848

Nutrition Security for Planetary Health



Irana Hawkins, Public Health Program, Walden University, Minneapolis, USA

Using the lens of nutrition security and equity for the living beings and living systems of the planet, *Nutrition Security for Planetary Health* takes an integrated, systems approach that not only delineates the antecedents of the multifaceted environmental crises—but offers solutions including the extensive co-benefits of whole plant foods nutrition as the foundational dietary pattern for improving planetary health. Overlooked yet inseparable problems that connect food systems to the transgression of our planetary boundaries, chronic disease, and zoonotic disease are discerned.

CRC Press

Market: Nutrition / Agriculture

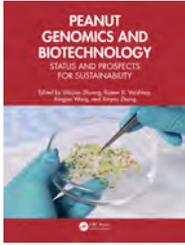
July 2025: 216x138: 187pp: 24 illus, 20 halftones, 4 line drawings

Hb: 978-0-367-72120-6: **£44.99**

★ For full contents and more information, visit: www.routledge.com/9780367721206

Peanut Genomics and Biotechnology

Status and Prospects for Sustainability



Edited by **Weijian Zhuang, Rajeev K. Varshney, Xingjun Wang** and **Xinyou Zhang**

In a world where food security and sustainable agriculture face unprecedented challenges, the cultivated peanut emerges as an important food crop. Representing an essential quality oil and food legume crop grown across over 100 countries, peanuts provide vital nutrition and economic stability. *Peanut Genomics and Biotechnology: Status and Prospects for Sustainability* delves into the fascinating journey of peanuts, from their evolutionary origins as a natural tetraploid hybrid to their critical roles in addressing global food and oil demands amidst changing climates.

CRC Press

Market: Agriculture / Horticulture

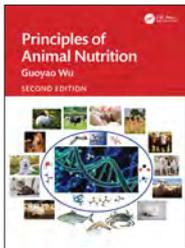
October 2025: 280x210: 368pp: 36 illus, 32 halftones, 4 line drawings

Hb: 978-1-032-42049-3: **£180.00**

★ For full contents and more information, visit: www.routledge.com/9781032420493

2nd Edition

Principles of Animal Nutrition



Guoyao Wu, Texas A&M University, College Station, USA

The second edition of *Principles of Animal Nutrition* presents a comprehensive coverage of nutrition and metabolism in ruminants, nonruminant mammals (e.g., swine and horses), and poultry, as well as aquatic and companion animals. Substantially revised, expanded, and updated to reflect scientific advances, this book highlights the foundational aspects of nutrition that are essential to animal growth, development, reproduction, lactation, health, and survival.

CRC Press

Market: Nutrition Science

October 2025: 280x210: 784pp: 321 illus, 41 halftones, 280 line drawings

Hb: 978-1-032-49086-1: **£165.00**

Prev. Ed Hb: 978-1-4987-2160-8

★ For full contents and more information, visit: www.routledge.com/9781032490861

BIOLOGY, LIFE & PLANTS SCIENCE

Anatomy and Histology of the Pig

A Concise Full-Color Atlas



Edited by **Christian J.R. Alfaro**, Medical University of South Carolina and **Kristi Helke**, South Carolina's Medical Univ.

This comprehensive anatomy book is the first guide specific to the pig since 1982. The full-color illustrations are accompanied by written material specific to each anatomic section, with English labeling terms for the various anatomic structures. It will cover all the major areas of interest in swine, including cardiovascular, digestive, neurologic and thoracic structures. Differences between domestic and miniature pigs will be discussed.

CRC Press

Market: Life Science

October 2025: 280x210: 202pp: 175 illus, 36 halftones, 139 line drawings

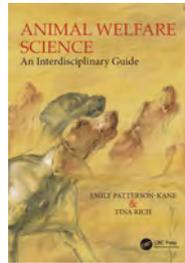
Hb: 978-0-367-26661-5: **£200.00**

★ For full contents and more information, visit: www.routledge.com/9780367266615

TEXTBOOK

Animal Welfare Science

An Interdisciplinary Guide



Edited by **Emily Patterson-Kane** and **Tina Rich**

From blue skies scientists to front line animal rescue, there is a need for this textbook which distills and interprets the core concepts and language of animal welfare science. Coverage includes the main theories and why we needed them, practical advice for how to assess animal welfare, illustrative examples of different species and the importance of their interactions, and the stresses and strains experienced across an increasingly diverse workforce. Foundational knowledge is combined with real-world examples and recent advances to communicate the content and spirit of this unique field. Sidebars, boxes, bullet points, tables, and copious color illustrations aid accessibility.

CRC Press

Market: Animal Welfare

September 2025: 254x178: 312pp: 48 illus, 38 halftones, 10 line drawings

Pb: 978-1-032-44636-3: **£79.99**

★ For full contents and more information, visit: www.routledge.com/9781032446363

2nd Edition

Atlas of European Mammals



Edited by **Anthony J. Mitchell-Jones**, The European Mammal Foundation, **Giovanni Amori**, CNR-IRET, Italy, **Boris Kryštufek**, Natural History Museum, **Ferdia Marnell**, Nat. Parks and Wildlife Service, **Svetlana Miteva**, The Habitat Foundation, **Alexandra Sallay-Moşoi**, BOKU Univ., **Laurent Schley**, Nature and Forest, **Johan Thissen**, European Mammal Foundation and **Vladimir Vohralík**, Chares Univ.

Since 1999, this atlas has proved a valuable resource for mammalogists across the globe. Now thoroughly updated, the new edition has extended the coverage of Europe to include Belarus, Moldova and Ukraine. Specialists have collected distribution data for each country using an agreed species list and a standard mapping system. This landmark volume presents maps of 247 species from 42 countries with more than 125,200 unique records, taking into account recent extinctions to give the most up-to-date picture possible. Accounts for each species include details of taxonomy and variation, habitat, population and international legal and conservation status.

CRC Press

Market: Life Science

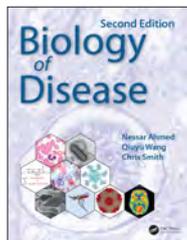
December 2025: 280x210: 594pp: 430 illus, 430 halftones

Hb: 978-0-367-18686-9: **£165.00**

★ For full contents and more information, visit: www.routledge.com/9780367186869

TEXTBOOK • 2nd Edition

Biology of Disease



Nessar Ahmed, Chris Smith and Qiuyu Wang

Biology of Disease describes the biology of many human disorders and disease encountered in a clinical setting. The authors assume no prior knowledge from the reader. Real cases used throughout illustrate the importance of biology in understanding the causes of disease, as well as in diagnosis and therapy. This second edition has been thoroughly updated throughout and is now presented in full colour with increased illustration. Carefully designed for first and second year students in biomedical science programs the book will also be a highly effective reference for health science professionals as well as

being valuable to students beginning medical school.

CRC Press

Market: Biology / Medical Science

November 2025: 280x210: 656pp: 779 illus, 379 halftones, 400 line drawings

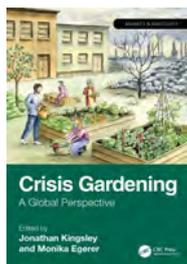
Pb: 978-1-032-28436-1: **£54.99**

Prev. Ed Pb: 978-0-7487-7210-0

★ For **full contents** and more information, visit: www.routledge.com/9781032284361

Crisis Gardening

A Global Perspective



Edited by **Jonathan Kingsley**, Swinburne University of Technology and **Monika Egerer**, Technical University of Munich

Series: *Advances in Agroecology*

Crisis gardening can be linked to transformative change in food systems through socio-ecological aspects of agroecology. A global synthesis that provides diverse perspectives from scholars around the world will provide an overview of gardening during crises with ties to agroecology. Such a perspective is critical as we grapple with food system crises, pandemics, climate change, biodiversity loss, mental health issues and political conflict globally. The aim of this edited volume is to

bring together leaders and experts (academics, policy makers and practitioners) to provide case studies of crisis gardening and to develop recommendations to harness the lessons from this practice.

CRC Press

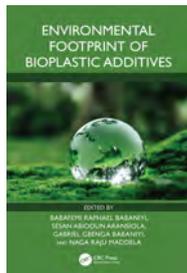
Market: Ecology

August 2025: 254x178: 200pp: 31 illus, 19 halftones, 12 line drawings

Pb: 978-1-032-56406-7: **£56.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032564067

Environmental Footprint of Bioplastic Additives



Edited by **Babafemi Raphael Babaniyi**, **Sesan Abiodun Aransiola**, Univ. of Abuja, **Gabriel Gbenga Babaniyi** and **Naga Raju Maddela**, Uni. College of Eng. Sci. and Tech, India

This book offers a comprehensive understanding of bioplastic compositions, degradation processes, and the environmental impact of various additives. Through detailed life cycle analyses, it assesses how bioplastic additives compare to conventional plastic additives in terms of sustainability and ecological impact. The book also addresses the challenges of managing bioplastic waste. This book is an essential resource for researchers, policymakers and industry professionals. It bridges the gap

between scientific understanding and practical implementation, empowering stakeholders to make informed decisions and contribute to sustainable bioplastic waste management.

CRC Press

Market: Environmental Science

October 2025: 254x178: 392pp: 29 illus, 6 halftones, 23 line drawings

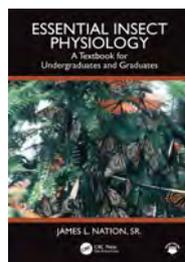
Hb: 978-1-032-99186-3: **£160.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032991863

TEXTBOOK

Essential Insect Physiology

A Textbook for Undergraduates and Graduates



James L. Nation, Sr., University of Florida, Gainesville, USA

This textbook is the first to teach insect physiology and biology specifically to students who lack a strong background in biochemistry and molecular biology. Avoiding taxonomic language and supported with high-quality figures, chapter summaries, end-of-chapter review questions and a suite of PowerPoint slides for use in teaching, it describes the fundamental processes. These include molting and metamorphosis, digestion of food, nerve and muscle function, flight, biological rhythms, circulation and breathing, immunity, and how climate and climate change has, and is, affecting insects.

CRC Press

Market: Entomology

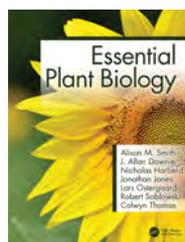
August 2025: 254x178: 222pp: 138 illus, 35 halftones, 103 line drawings

Pb: 978-1-041-01277-1: **£74.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041012771

TEXTBOOK

Essential Plant Biology



Alison M. Smith, J. Allan Downie, Nicholas Harberd, Jonathan Jones, Lars Ostergaard, Robert Sablowski and Colwyn Thomas

This exciting new textbook presents current knowledge of plant biology, highlighting important topics for future research.

It addresses the dynamic nature of plant genomes, the conversion of products of photosynthesis into molecules that comprise the plant, and the nature and coordination of growth, development, and reproduction. It describes how these properties of plants are impacted by their surroundings.

Finally, it outlines the history, importance and future of human interactions with plants. Designed for undergrad biology students who have a grounding in the fundamentals of molecular biology/biochemistry, it is also a valuable resource for postgrads in plant research.

CRC Press

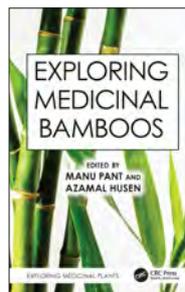
Market: Plant Science

November 2025: 280x210: 582pp: 567 illus, 221 halftones, 346 line drawings

Pb: 978-1-041-08173-9: **£59.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041081739

Exploring Medicinal Bamboos



Edited by **Manu Pant**, Dep of Biotech at Graphic Era (Deemed to be Uni), India and **Azamal Husen**, Wolaita Sodo University, Ethiopia

Series: *Exploring Medicinal Plants*

Exploring Medicinal Bamboos focuses on phytochemically active ingredients of bamboos imparting therapeutic potentials to each species. There are dedicated chapters on species such as bambusa spp., lophatherum gracile, sasa senanensis, melocanna baccifera, and phyllostachys spp., providing a deep understanding of the medicinal potential of these plants.

CRC Press

Market: Botany / Plant Sciences

September 2025: 254x178: 218pp: 26 illus, 18 halftones, 8 line drawings

Hb: 978-1-032-77162-5: **£160.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032771625

Fungal Omics

Methods and Applications



Edited by **Imran Ul Haq**, University of Agriculture Faisalabad, Pakistan, **Siddra Ijaz** and **Hayssam M. Ali**

Fungal Omics: Methods and Applications provides a comprehensive account of trends and developments of fungal "omics" approaches. It presents literature on various "omics" applications and includes information on plant taxonomy; genetics, epigenetics, biotechnological and industrial applications. It begins with basic concepts, extending to complex and in-depth knowledge, and finally, describes the fungal genome and all "omics" comprehensively.

CRC Press

Market: Plant Sciences

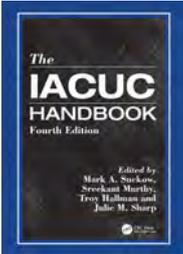
July 2025: 234x156: 244pp: 15 illus, 6 halftones, 9 line drawings

Hb: 978-1-032-58742-4: **£160.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032587424

4th Edition

The IACUC Handbook



Edited by **Mark A. Suckow**, University of Kentucky, **Sreekant Murthy**, **Troy Hallman** and **Julie M. Sharp**

The IACUC Handbook has become "the Bible" for individuals serving on their institution's IACUC. It provides a foundation for implementing the many and varied responsibilities of this committee. This Fourth Edition comprehensively addresses the significant changes in the pertinent regulatory environment and interpretation of federal laws, regulations, and policies. It includes modifications to regulations and new chapters on basic IACUC operations; animals used in agricultural research and teaching; invertebrates; disaster planning; the Pacific Rim ethical review framework; operational communications and workflow;

reduction of regulatory burden; and research reproducibility.

CRC Press

Market: Lab Animal Science

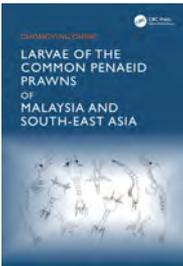
October 2025: 280x210: 640pp: 5 illus, 5 line drawings

Hb: 978-1-032-22497-8: **£99.99**

Prev. Ed Hb: 978-1-4665-5564-8

★ For **full contents** and more information, visit: www.routledge.com/9781032224978

Larvae of the Common Penaeid Prawns of Malaysia and South-East Asia



Chong Ving Ching

This book details the full larval series of 10 common, economically important species of penaeid prawn in five genera, including *Metapenaeus*, *Metapenaeopsis*, *Parapenaeopsis*, *Penaeus* and *Trachysalambria*. Four *Parapenaeopsis* species are documented for the first time. A synthesis of larval development across the five genera includes an advanced hypothesis of four developmental pathways. Showcasing accurate artwork of 102 non-stylized, as-it-is drawings of penaeid larvae, cultured in the laboratory, the book describes extensive and intensive larval diagnoses, staging and taxonomic treatment for the generic and specific identification of the nauplius, protozoa, mysis and first postlarva.

CRC Press

Market: Aquaculture

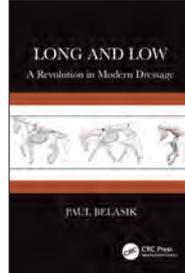
November 2025: 254x178: 192pp: 123 illus, 10 halftones, 113 line drawings

Hb: 978-1-041-10226-7: **£145.00**

★ For **full contents** and more information, visit: www.routledge.com/9781041102267

Long and Low

A Revolution in Modern Dressage



Paul Belasik, Pennsylvania Riding Academy

This short book examines the history, origins and unintended consequences of the commonly used and widely accepted practice of "long and low" riding and training in dressage. International rider, trainer, writer and teacher Paul Belasik explains the little-known origins of the mysterious practice that has evolved into a major modern-day controversy. Long and low riding has negative effects on the quality of dressage at the highest levels of the sport and widespread confusion for riders of all levels. This important book seeks to educate riders on why it is taught, where it came from, and how the unintended consequences have played out for riders all over the world.

CRC Press

Market: Horse Riding

August 2025: 198x129: 96pp: 11 illus, 4 halftones, 7 line drawings

Pb: 978-1-041-04258-7: **£22.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041042587

Manual of Nonhuman Primate Anesthesia, Analgesia, and Postoperative Care



Edited by **Cholawat Pacharinsak**

This practical guide to Non-Human Primate (NHP) anesthesia and analgesia in research facilities is the first NHP-specific anesthesia resource. It offers an easy-to-navigate manual, with diagrams, bullet points, color photos, and quick reference tables. With each chapter authored by an experienced veterinary, lab animal or zoo animal practitioner, the book includes topics like troubleshooting anesthetic complications, recognizing pain, postoperative care and behavioral and environmental enrichment. This is an essential reference for veterinarians, technicians, and other research and laboratory personnel working with NHPs.

CRC Press

Market: Laboratory Animal Science

November 2025: 234x156: 216pp: 85 illus, 70 halftones, 15 line drawings

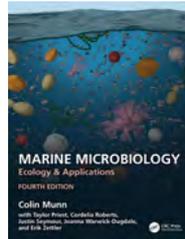
Pb: 978-1-032-50961-7: **£68.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032509617

TEXTBOOK • 4th Edition

Marine Microbiology

Ecology & Applications



Colin Munn, University of Plymouth, UK, **Taylor Priest**, **Cordelia Roberts**, **Justin Seymour**, **Joanna Warwick-Dugdale** and **Erik Zettler**

The fourth edition of this bestselling text has been rigorously updated to reflect major new discoveries and concepts since 2019, revealed by further development of high-throughput sequencing, omics and single-cell technologies which have led to major advances in understanding of how the activities, interactions, and functions of marine microbes affect ecosystem processes and global biogeochemical cycles. This is the only textbook addressing such a broad range of topics in the specific area of Marine Microbiology, now a core topic within broader Marine Science degrees.

CRC Press

Market: Life Science

October 2025: 280x210: 448pp: 171 illus, 118 halftones, 53 line drawings

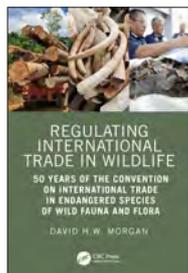
Pb: 978-1-032-85088-7: **£89.99**

Prev. Ed Pb: 978-0-367-18356-1

★ For **full contents** and more information, visit: www.routledge.com/9781032850887

Regulating International Trade in Wildlife

50 Years of the Convention on International Trade in Endangered Species of Wild Fauna and Flora



David H.W. Morgan

Regulating International Trade in Wildlife: 50 Years of the Convention on International Trade in Endangered Species of Wild Fauna and Flora represents the first published history of the Convention to coincide with the 50th anniversary of its entry into force. It examines the context under which the Convention was created, and charts the development of its internal organization, including its governing and intersessional bodies and its secretariat, and the personalities that built them.

CRC Press

Market: Wildlife Science

October 2025: 234x156: 192pp: 32 illus, 21 halftones, 11 line drawings

Pb: 978-1-032-86638-3: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032866383

Seeking Societal Symbiosis for the Sustainable Use of Materials



Mark Everard, UWE Bristol

This book considers the societal use of materials, historically, in the less-than-optimal present and aspirationally as a central thread in addressing wider sustainable development challenges. It accounts for linked chemical, physical and socio-economic consequences right through value chains, from raw material extraction through manufacture and use and onwards to post-use. Author Mark Everard proposes that the four principal societal sectors – business, government, civil society organisations and knowledge-providers – can optimally work symbiotically around co-created and consensual long-term sustainability goals to accelerate necessary progress.

CRC Press

Market: Environmental Science

August 2025: 216x138: 202pp: 6 illus, 1 halftone, 5 line drawings

Pb: 978-1-041-06922-5: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041069225

Shrimp and Prawn Welfare in the Wild-Caught Fishing Industry

A Global Review and Recommendations for Research and Policy



Ren Ryba, AnimalAsk, **Shannon M. Davis**, Shrimp Welfare Project, **Tse Yip Fai**, Independent Researcher and **Peter Singer**, Emeritus Prof., Princeton Univ.

This book delves into the ethical implications of the probability that shrimp and prawns are capable of feeling pain. The authors provide a new dataset of the estimated numbers of individual shrimp caught by country and species, using this to describe the shrimp fishing industry in the world's top 30 countries by estimated catch. The book suggests ways that policymakers could improve wild-caught shrimp welfare, from installing electrical stunning equipment in large-scale trawl fisheries to improving supply chain practices in small-scale fisheries. It provides a roadmap for future research and policy to address

this urgent, emerging challenge.

CRC Press

Market: Animal Welfare

September 2025: 216x138: 150pp: 11 illus, 1 halftone, 10 line drawings

Pb: 978-1-032-90145-9: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032901459

2nd Edition

The Minipig in Biomedical Research



Edited by **Andrew Makin**, **Anthony D. Dayan**, London, UK, **Kenneth L. Hastings**, Sanofi-aventis, Bethesda, Maryland, USA and **Niels Christian Ganderup**

The second edition of *The Minipig in Biomedical Research* is a comprehensive resource for research scientists on the use of the minipig in basic and applied biomedical research. This new edition gives greater emphasis to several different strains of minipig, the greater understanding of genomics, genetic manipulation, immunology, their value in the development of novel exploratory and therapeutic implantable devices, and genetic and surgical procedures to correct inherited disorders. The second edition includes full color throughout, making it the go-to guide and resource for users of minipigs.

CRC Press

Market: Laboratory Animal Science

November 2025: 280x210: 504pp: 150 illus, 80 halftones, 70 line drawings

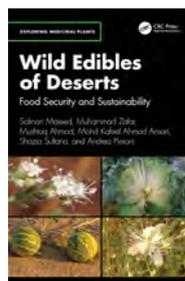
Hb: 978-1-032-25593-4: **£195.00**

Prev. Ed Hb: 978-1-4398-1118-4

★ For **full contents** and more information, visit: www.routledge.com/9781032255934

Wild Edibles of Deserts

Food Security and Sustainability



Salman Majeed, **Muhammad Zafar**, **Mushtaq Ahmad**, **Mohd Kafeel Ahmad Ansari**, Faculty of Natural Sciences, Uni of Guyana, South America, **Andrea Pieroni** and **Shazia Sultana**

Series: Exploring Medicinal Plants

Global Wild Edibles of Deserts: Food Security and Sustainability provides coverage of topics in food and health in desert rangelands, using an interdisciplinary approach that considers health not only in a functional and human sense, but also in terms of external factors including aridity.

CRC Press

Market: Plant Science

August 2025: 254x178: 241pp: 80 illus, 76 halftones, 4 line drawings

Hb: 978-1-032-86511-9: **£190.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032865119

TEXTBOOK

Zoo Animal Welfare



Edited by **Paul Rose**, Exeter Univ., **Zoe Newnham**, Marwell Wildlife and **Ian Hickey**, Chester Zoo

This book unpicks the different concepts of welfare in the zoo and aquarium, considering how enclosure design, nutrition, conservation activities, visitor engagement and daily husbandry all need to have a welfare-focus to be relevant to the species being housed. The book provides the practical application of evidence-based welfare theory, centred on the concept of "welfare-focussed husbandry", which enables zoo animals to experience positive welfare. *Zoo Animal Welfare* will empower readers to go "beyond the norm" when considering what zoo animals really need, applying their new knowledge for the

benefit of both animals and zoos.

CRC Press

Market: Animal Welfare

November 2025: 254x178: 408pp: 141 illus, 81 halftones, 60 line drawings

Pb: 978-1-032-54736-7: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032547367

CHEMISTRY & PHARMACEUTICAL SCIENCE

2nd Edition

A Guide to Particulate Science in Pharmaceutical Product Development



Margaret D. Louey, Timothy M. Crowder and Anthony J. Hickey, RTI International, North Carolina, USA

Series: *Drugs and the Pharmaceutical Sciences*

The pharmaceutical applications of powder technology have long been recognized. Yet while many books focus on aspects of powder formation and behaviour, there are few texts that explore the power of particulate science in the design, manufacture, and control of quality medicines. This revision discusses key principles and practical applications. The authors cover particulate material, its form and production, sampling from bodies of powder, particle size descriptors and statistics, behaviour of particles and powder, instrumental analysis, particle size measurement and synergy of

adopted techniques, and in vitro and in vivo performance criteria.

CRC Press

Market: Pharmaceutical Science

August 2025: 234x156: 222pp: 31 illus, 6 halftones, 25 line drawings

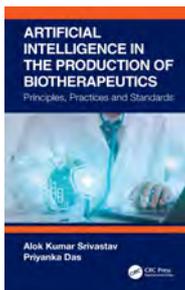
Hb: 978-1-032-73182-7: £160.00

Prev. Ed Hb: 978-1-57491-142-8

★ For full contents and more information, visit: www.routledge.com/9781032731827

Artificial Intelligence in the Production of Biotherapeutics

Principles, Practices and Standards



Alok Kumar Srivastav and Priyanka Das

Delving into the core of biomanufacturing, the book provides a structured journey through its critical phases. It begins with an introduction to modern biomanufacturing principles, quality-by-design approaches, and the integration of AI. Subsequent chapters examine raw material management, lean manufacturing practices, and the application of predictive analytics to optimize supply chains. Readers will explore advanced tools such as AI-enhanced data acquisition in PAT, automated standard operating procedures (SOPs), and AI-driven process controls for fermenters and chromatography systems.

CRC Press

Market: Biopharmaceuticals

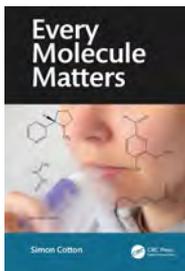
August 2025: 234x156: 304pp: 59 illus, 59 line drawings

Hb: 978-1-041-03635-7: £99.99

★ For full contents and more information, visit: www.routledge.com/9781041036357

TEXTBOOK

Every Molecule Matters



Simon A. Cotton, University of Birmingham, UK

These range from the familiar odours which give pleasure to eating (and the spices that add piquancy) and the vitamins that are vital to our survival, to the way in which insects and plants use chemicals to protect themselves. There's controversy, with the compounds of chlorine which range from life-supporting anaesthetics and natural antibiotics to insecticides like DDT, which saved innumerable lives but became an environmental cause-célèbre. Through the addictive power of nicotine, smoking tobacco morphed from being a curiosity imported from the Americas to a megapound industry that left human illness and death in its wake.

CRC Press

Market: General Chemistry

September 2025: 234x156: 316pp: 490 illus, 490 line drawings

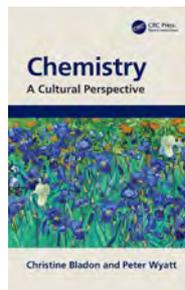
Pb: 978-1-041-11062-0: £42.99

★ For full contents and more information, visit: www.routledge.com/9781041110620

TEXTBOOK

Chemistry the Central Science

A Cultural Perspective



Christine Bladon and Peter Wyatt

A series of stories to illustrate the impact of chemistry on the lives of people from the past to the present day. The book gives chemistry students and lay readers a window into how interactions at the atomic level translate into familiar materials. Teachers of chemistry and related subjects may also find the content and wealth of detail in the book a valuable resource to supplement their lecture room and classroom courses.

CRC Press

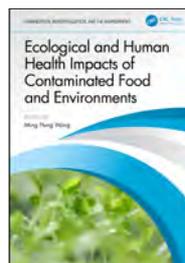
Market: Chemistry

October 2025: 234x156: 240pp: 132 illus, 12 halftones, 120 line drawings

Pb: 978-1-032-90057-5: £49.99

★ For full contents and more information, visit: www.routledge.com/9781032900575

Ecological and Human Health Impacts of Contaminated Food and Environments



Edited by Ming Hung Wong, Consortium on Health, Environment, Education, and Research (CHEER), The Education University of Hong Kong, China

Series: *Urbanization, Industrialization, and the Environment*

This book discusses linkages between the natural and disturbed chemical composition of the earth's surface and ecological and human health. It reviews the environmental geochemical cycles of natural elements and persistent toxic substances (PTS) in the environment, highlighting the degradation of soil and water resources due to human activities such as extraction and usage of minerals. There is an attempt to provide evidence concerning the health effects of consuming contaminated food, due to frequent consumption of mercury-laden fish. Lastly, sources, fates, and ecological effects of various PTS are presented, including microplastics and associated chemicals.

CRC Press

Market: Environmental Science

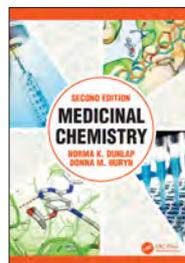
July 2025: 254x178: 458pp: 44 illus, 16 halftones, 28 line drawings

Hb: 978-1-032-78706-0: £180.00

★ For full contents and more information, visit: www.routledge.com/9781032787060

TEXTBOOK • 2nd Edition

Medicinal Chemistry



Norma K. Dunlap, Middle Tennessee State University, USA and Donna M. Huryn, University of Pennsylvania and University of Pittsburgh, USA

This book provides a concise introduction to the medicinal chemistry of therapeutically active compounds. Written in an accessible style, it offers a brief overview of the drug development process, from discovery to approved drug. Emphasizing medicinal chemistry strategies, the content is organized by target as well as therapeutic area drug classes. It covers existing drugs, and the discovery process that led to their development. Aimed at students and professionals interested in drug discovery, *Medicinal Chemistry* requires little prior knowledge, making it ideal for classroom and training seminar use.

Garland Science

Market: Chemistry

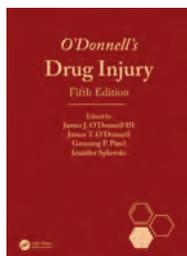
October 2025: 254x178: 544pp: 451 illus, 4 halftones, 447 line drawings

Pb: 978-1-032-73715-7: £110.00

Prev. Ed Pb: 978-0-8153-4556-5

★ For full contents and more information, visit: www.routledge.com/9781032737157

5th Edition

O'Donnell's Drug Injury

Edited by **James J. O'Donnell III**, Rosalind Franklin University of Medicine and Science, **James T. O'Donnell**, Rush University Medical Center, Chicago, USA, **Gourang P. Patel**, University of Chicago Medicine, USA and **Jennifer Splawski**, Bluesight TM, A Medication Intelligence Company

O'Donnell's Drug Injury, Fifth Edition presents up-to-date information on adverse events caused by drugs via direct pharmacological action or indirectly through injury caused by impairment or an altered mental state. The impact of drug injury on legal cases is emphasized throughout the book. This book

serves as a comprehensive reference for attorneys, pharmacists, physicians, risk managers, nurses, drug manufacturers, and regulators—as well as anyone with an interest in drug use and drug injury.

CRC Press

Market: Pharmaceutical Science

July 2025: 280x210: 944pp: 89 illus, 11 halftones, 78 line drawings

Hb: 978-1-041-01545-1: **£230.00**★ For full contents and more information, visit: www.routledge.com/9781041015451

COMPUTER SCIENCE & COMPUTER GRAPHICS

TEXTBOOK

A Gamer's Introduction to Programming with MonoGame

Welcome Brave Adventurer!

Aaron Langille, Cambrian College, Canada

In this book, you'll learn the essential ins-and-outs of how to work with fonts and text, images and sprites, audio and even animation. You'll learn how to give your players control over their destiny through keyboards, mice, and gamepads and you'll harness the never-ending energy of the gameplay loop functions. Within these pages you'll find a fun and approachable adventure that will introduce you to the accessible but powerful MonoGame development framework. Using Visual Studio and C#, you'll write simple but engaging interactive scenes and games that will gradually build up your coding skills and confidence.

Chapman and Hall/CRC

Market: Computer Science

October 2025: 234x156: 328pp: 92 illus, 77 halftones, 15 line drawings

Hb: 978-1-032-74538-1: **£125.00**★ For full contents and more information, visit: www.routledge.com/9781032745381**Advances in Hardware Design for Security and Trust**Edited by **Ranga Vemuri** and **John Emmert***Series: Computer Hardware Security and Correctness*

This book covers the entire spectrum of hardware design including integrated circuits, embedded systems, and design automation tools. It also captures recent advances in various attack and defense methods. Researchers and industry practitioners would benefit from the tutorial style exposition to the topics along with advanced research results and emerging directions.

CRC Press

Market: Computer Engineering

September 2025: 234x156: 392pp: 175 illus, 45 halftones, 130 line drawings

Hb: 978-1-032-84042-0: **£130.00**★ For full contents and more information, visit: www.routledge.com/9781032840420**AI and Fintech**

Improving the Financial Landscape

Edited by **Jaheer Mukthar K.P.**, Kristu Jayanti CollegeAutonomous, Bengaluru, India, **Rosario Mercedes****Huerta-Soto**, Vishal Jain, Sharda University, Greater Noida, India and **Edwin Hernan Ramirez-Asis**, Universidad Nacional Santiago Antúnez de Mayolo, Peru*Series: Computational Intelligence Techniques*

This book explores the transformative intersection of AI and Fintech. It encompasses an in-depth analysis of how AI is reshaping the financial industry, revolutionizing traditional practices, and paving the way for innovative solutions. It provides understanding of the relationship between AI and Fintech, offering insights into the current state, future potential, challenges, and ethical considerations within this dynamic landscape. It addresses critical ethical considerations surrounding AI and Fintech, fostering a dialogue on responsible AI integration and data privacy. This book is aimed at researchers and professionals in computer engineering, AI, and fintech.

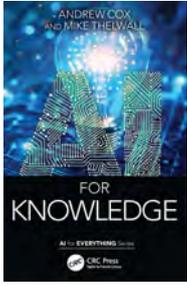
CRC Press

Market: Machine Learning and Pattern Recognition

August 2025: 234x156: 316pp: 53 illus, 53 line drawings

Hb: 978-1-032-82517-5: **£120.00**★ For full contents and more information, visit: www.routledge.com/9781032825175

AI for Knowledge



Andrew Cox and Mike Thelwall

Series: AI for Everything

The book investigates how AI will impact everyday knowledge discovery, understanding and creation. It considers both the positive benefits and the many informational and ethical challenges, including the impact on our wider information culture. It then weighs up the impact on scholarship, including the processes of scholarly communication. It explains the role of libraries and archives and how they could be enhanced using AI. It concludes by showing how governments can regulate AI to ensure social benefit and outlines what we as individuals need to know about AI.

CRC Press

Market: Artificial Intelligence / Communication

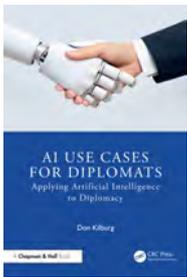
June 2025: 216x138: 92pp

Pb: 978-1-032-87424-1: **£35.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032874241

AI Use Cases for Diplomats

Applying Artificial Intelligence to Diplomacy



Donald Kilburg

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

Drawing on over 21 years of experience integrating technology into foreign affairs, the author reveals how AI is revolutionizing diplomatic engagement, crisis management, and public diplomacy. Readers will discover practical strategies for implementing AI in diplomatic operations, gain insights into the future of AI-driven global governance, and learn when—crucially—not to use AI at all. Whether you're a diplomatic practitioner, a student of international affairs, or fascinated by technology's impact on global relationships, this guide charts

the course for diplomacy's next evolution—where human wisdom and AI converge to address our world's most pressing challenges.

Chapman and Hall/CRC

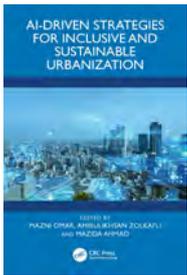
Market: Computer Science

August 2025: 234x156: 312pp

Pb: 978-1-041-00835-4: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041008354

AI-Driven Strategies for Inclusive and Sustainable Urbanization



Edited by **Mazni Omar, Samsul Ariffin Abdul Karim, FASD, Universiti Teknologi Petronas, Malaysia, Amirulikhshan Zolkaffi and Mazida Ahmad**

This book explores the transformative potential of artificial intelligence (AI) in reshaping urban development practices. This book studies how AI technologies can be utilized to tackle the complex challenges encountered in urban areas, spanning from ethical, social, and environmental implications across urban governance and beyond. Through interdisciplinary research, case studies, and expert insights, the book aims to educate students in higher learning and inspire policymakers, urban planners, and practitioners to leverage AI technologies to tackle urban challenges and build better cities for all residents.

CRC Press

Market: Computer Science, Urban Studies, Artificial Intelligence.

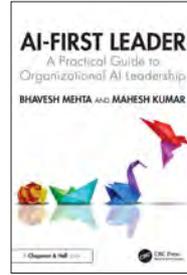
October 2025: 234x156: 288pp: 32 illus, 32 line drawings

Pb: 978-1-041-04869-5: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041048695

AI-First Leader

A Practical Guide to Organizational AI Leadership



Bhavesh Mehta and Mahesh Kumar

AI-First Leader is a practical guide for executives, technology leaders, and decision-makers seeking to turn artificial intelligence into a strategic advantage. As AI rapidly reshapes how organizations operate and compete, this book provides a clear roadmap from initial awareness to enterprise-wide adoption. It equips leaders with the tools to navigate both the promise and complexity of today's AI landscape, including machine learning, generative AI, and autonomous systems.

Chapman and Hall/CRC

Market: Artificial Intelligence / Organization Studies / Leadership

October 2025: 234x156: 232pp: 45 illus, 45 line drawings

Pb: 978-1-041-09823-2: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041098232

An Introduction to Deep Reinforcement Learning

Vinod K. Mishra

This book shows how artificial intelligence and machine learning (AIML) tools have transformed the workings of vast swaths of our private, working, and social lives beyond recognition. It homes in on deep reinforcement learning (DRL) with a special focus on its mathematical and algorithmic foundations. Undergraduate and early graduate students should find it to be a good guide to the fast-developing areas of DRL and its myriad applications. Hopefully, it will spur them to dive deep and understand the coming revolution in every aspect of society based on these ideas.

Chapman and Hall/CRC

Market: Computer Science

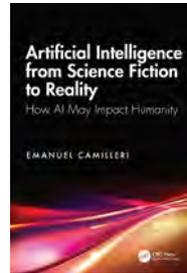
December 2025: 216x138: 164pp

Pb: 978-1-032-65143-9: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032651439

Artificial Intelligence from Science Fiction to Reality

How AI May Impact Humanity



Emanuel Camilleri

Artificial Intelligence from Science Fiction to Reality examines various aspects, starting with the evolution of human and artificial intelligence. It places AI in its proper context and discusses non-technical aspects, such as philosophical and social issues. The book also focuses on the hardware and software technology that support AI, and the essential cyber security systems that are required to address the evolving AI threat landscape. It examines centres for AI safety that are nonprofit research organisations, which focus on the mitigation of AI risks by proposing solutions against threat actors.

CRC Press

Market: Artificial Intelligence

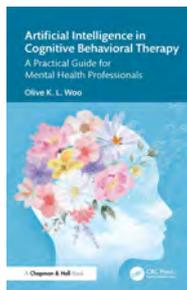
November 2025: 254x178: 320pp: 40 illus, 40 line drawings

Pb: 978-1-041-10141-3: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041101413

Artificial Intelligence in Cognitive Behavioral Therapy

A Practical Guide for Mental Health Professionals



Olive K.L. Woo, Private practice, Hong Kong

This book examines the transformative potential of integrating artificial intelligence (AI) with cognitive behavioral therapy. Tailored for mental health professionals, it offers evidence-based strategies and ethical frameworks for the potential adoption of AI in therapeutic practice.

Chapman and Hall/CRC

Market: Artificial Intelligence / Mental Health

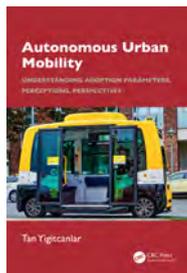
November 2025: 234x156: 272pp: 10 illus, 10 line drawings

Pb: 978-1-032-87151-6: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032871516

Autonomous Urban Mobility

Understanding Adoption Parameters, Perceptions, Perspectives



Tan Yigitcanlar, Queensland University of Technology

This book delves into the complex landscape of autonomous urban mobility, analysing the factors that influence public adoption, stakeholder perspectives, and societal perceptions in this rapidly evolving field. Aimed at scholars, policymakers, urban planners, and industry professionals, the book offers a thorough exploration of the key elements driving the integration of autonomous vehicles in urban settings. This volume, alongside its companion, *Autonomous Urban Mobility: Understanding Innovation Principles, Priorities, Policies*, offers a holistic view of Autonomous Urban Mobility.

CRC Press

Market: Transportation, Smart Mobility Adoption, Urban City Planning

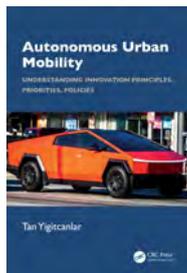
August 2025: 234x156: 310pp: 42 illus, 42 line drawings

Pb: 978-1-032-99721-6: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032997216

Autonomous Urban Mobility

Understanding Innovation Principles, Priorities, Policies



Tan Yigitcanlar, Queensland University of Technology

This book provides a comprehensive exploration of the rapidly evolving field of autonomous urban mobility, examining its transformative potential and the principles guiding its innovation. This essential resource offers deep insights into the societal, policy, and urban impacts of autonomous vehicles, drawing on an extensive body of research. This volume, alongside its companion, *Autonomous Urban Mobility: Understanding Adoption Parameters, Perceptions, Perspectives*, offers a holistic view of Autonomous Urban Mobility.

CRC Press

Market: Transportation, Smart Mobility Innovation, Urban City Planning

August 2025: 234x156: 401pp: 31 illus, 31 line drawings

Pb: 978-1-032-99699-8: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032996998

BiteSize Python for Absolute Beginners

With Practice Labs, Real-World Examples, and Generative AI Assistance



Di Wu

Series: *Chapman & Hall/CRC The Python Series*

As an introduction to Python, this book allows readers to take a slow and steady approach to understanding Python code, explaining concepts, connecting programming with real-life examples, writing Python programs, and completing case studies. Python programming is broken down into easily digestible lessons of less than 5 minutes each, following the BiteSize approach. It includes coding demonstrations, practice tasks, case studies, and tips to show how you can incorporate generative AI into your learning toolkit. This book is designed for absolute beginners with no prior programming experience.

It is ideal for individuals with busy schedules or limited time for studying.

Chapman and Hall/CRC

Market: Programming Languages / Python

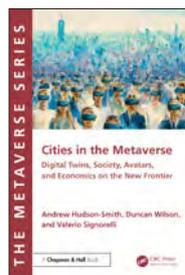
July 2025: 254x178: 240pp: 14 illus, 3 halftones, 11 line drawings

Pb: 978-1-032-86485-3: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032864853

Cities in the Metaverse

Spatial Computing, Digital Twins, Avatars, Economics and Digital Habitation on the New Frontier



Andrew Hudson-Smith, Duncan Wilson and Valerio Signorelli

Series: *The Metaverse*

This book offers a comprehensive exploration of the intersection between urban environments and digital realms. The book addresses the challenges, potential pitfalls and ethical considerations in creating and inhabiting digital cities. At the same time, it takes a step back and examines already abandoned digital worlds, offering lessons from past attempts at creating virtual spaces. Essential reading for urban planners, geographers, economists, technologists, policymakers, and anyone interested in the future of cities and digital interaction, *Cities in the*

Metaverse provides a balanced, informed perspective on this rapidly evolving field.

Chapman and Hall/CRC

Market: Computer Science

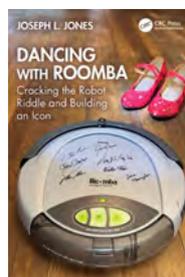
October 2025: 234x156: 152pp: 34 illus, 33 halftones, 1 line drawing

Pb: 978-1-032-57669-5: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032576695

Dancing with Roomba

Cracking the Robot Riddle and Building an Icon



Joseph L. Jones

Dancing with Roomba tells the unexpected story of the world's favorite robot. Selling nearly 50 million units since its launch, Roomba's unlikely success sprang from a breakthrough at an MIT robotics lab, an inventor who persevered through years of setbacks, and an inspired team that worked as one to smash every problem. This book provides a rare view behind the scenes, revealing how a revolutionary product came to be, how it works, and how a tiny company was able to best a crowd of corporate giants. Written in an easy, narrative style, *Dancing with Roomba* is accessible to all.

CRC Press

Market: Robotics / Entrepreneurship

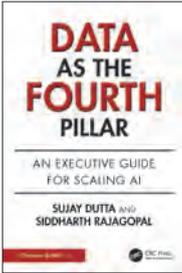
October 2025: 234x156: 256pp

Pb: 978-1-032-89061-6: **£26.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032890616

Data as the Fourth Pillar

An Executive Guide for Scaling AI



Sujay Dutta and Siddharth Rajagopal

Data as the Fourth Pillar reasons that data should be considered the Fourth Pillar of every enterprise, alongside people, processes, and technology. Aimed at Boards, CEOs, and CxOs, it provides a compelling case for why and how they should treat data as a strategic asset. It presents a comprehensive, success-by-design approach for enterprises, guiding them through a Maturity Framework to accelerate their data-centric journey. An essential resource for business executives in both SMBs and large enterprises, helping them navigate a highly complex and hyper-competitive business landscape while accelerating business value for their stakeholder communities.

Chapman and Hall/CRC

Market: Data Science

August 2025: 234x156: 230pp: 63 illus, 63 line drawings

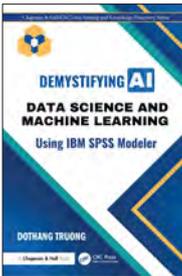
Pb: 978-1-032-83599-0: **£38.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032835990

TEXTBOOK

Demystifying AI

Data Science and Machine Learning Using IBM SPSS Modeler



Dothang Truong

Series: Chapman & Hall/CRC Data Mining and Knowledge Discovery Series

In this book, readers are guided through practical implementations using real datasets and SPSS Modeler, a user-friendly data mining tool. The approach remains consistent with a focus on application, providing step-by-step instructions for all stages of the data mining process using two large datasets, ensuring continuity and reinforcing concepts in a cohesive project framework. This book is a companion for beginners and experienced practitioners alike. It targets a broad audience, including students, lecturers, researchers, and industry

professionals. It offers flexibility in learning pathways and deepens understanding of data science using easy-to-follow, software-based approaches.

Chapman and Hall/CRC

Market: Computer Science

December 2025: 254x178: 600pp: 653 illus, 29 halftones, 624 line drawings

Hb: 978-1-032-74000-3: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032740003

Digital Strategy and Governance in Transformative Technologies



Edited by Arif Perdana, S. Vijayakumar Bharathi, Ridoan Karim, Saru Arifin and Aashish Srivastava

Digital Strategy and Governance in Transformative Technologies offers a comprehensive exploration of how emerging technologies are reshaping business operations, governance structures, and societal interactions. This timely volume examines the complex interplay between digital strategies and governance frameworks across AI, blockchain, cryptocurrencies, and the metaverse. It provides crucial insights for navigating the digital frontier. This essential resource serves as a guide for organizations and institutions grappling with digital transformation challenges.

CRC Press

Market: Technology, Strategy, Governance

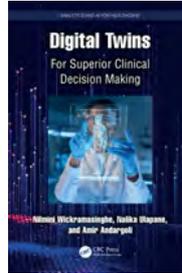
September 2025: 234x156: 480pp: 48 illus, 48 line drawings

Pb: 978-1-032-76268-5: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032762685

Digital Twins

For Superior Clinical Decision Making



Nilmini Wickramasinghe, Nalika Ulapane and Amir Andargoli

Series: Analytics and AI for Healthcare

This book centres on the topic of digital twins for superior healthcare decision support, as access is enabled to large volumes of multi-dimensional data such as patient's electronic medical records, medical scans, and data. This book is written for the healthcare audience, professionals, physicians, medical administrators, managers, and the IT practitioner. It would also serve as a useful reference for the senior level undergraduate students and graduate students in health informatics and public health.

CRC Press

Market: Computer Science, Medical, Digital Twins

August 2025: 234x156: 148pp: 7 illus, 7 line drawings

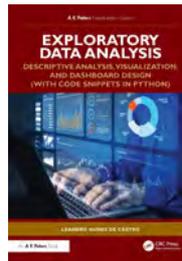
Pb: 978-1-032-78034-4: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032780344

TEXTBOOK

Exploratory Data Analysis

Descriptive Analysis, Visualization, and Dashboard Design (with Codes in Python)



Leandro Nunes de Castro

Series: AK Peters Visualization Series

With a strong focus on applied concepts, clarity and real-world applications, this book equips readers with the essential skills to excel in data analysis. Ideal for anyone eager to harness the potential of data, it combines theoretical depth with practical insights for compelling, meaningful analysis.

A K Peters/CRC Press

Market: Data Science

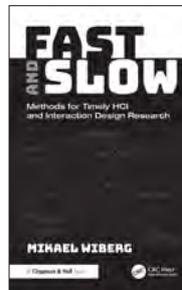
September 2025: 254x178: 342pp: 91 illus, 5 halftones, 86 line drawings

Pb: 978-1-032-93982-7: **£44.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032939827

Fast and Slow

Methods for Timely HCI and Interaction Design Research



Mikael Wiberg, Umeå University, Sweden

Drawing inspiration from fast and slow thinking, design thinking and our everchanging world, this book contrasts "fast" approaches—such as "quick-and-dirty" ethnography, prototyping, and AI-driven automation—with "slow" methodologies that emphasize ethnographic studies, longitudinal research, and participatory design.

Chapman and Hall/CRC

Market: Computer Science

August 2025: 234x156: 212pp: 9 illus, 1 halftone, 8 line drawings

Hb: 978-1-032-38154-1: **£81.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032381541

Futureshock

Happenings in Computer Science



Edited by **Sebastian Sequoiah-Grayson**

This book provides an accessible introduction to leading edge topics today, from AI ethics and cybersecurity, through to augmented realities, virtual interfaces, and much more. This collection of writings by experts in their respective fields, invites the reader to explore new worlds that race towards us. This book serves like a map that enables the reader to access vantage points of understanding from which the new digital ecosystem may be seen with clarity. It does not presume any in-depth knowledge on behalf of the reader. This book serves the professional working in their fields as they gain further insight into the new digital ecosystem.

CRC Press

Market: Computer Science / Digital Trends / Technology

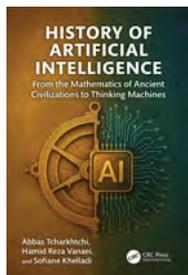
August 2025: 234x156: 192pp: 63 illus, 39 halftones, 24 line drawings

Pb: 978-1-032-70273-5: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032702735

History of Artificial Intelligence

From the Mathematics of Ancient Civilizations to Thinking Machines



Edited by **Abbas Tcharkhtchi, Hamid Reza Vanaei and Sofiane Khelladi**

This book provides an overview of AI's historical development, while understanding the cultural and scientific foundations that make today's AI possible. Through easy-to-understand explanations of complex ideas, and a focus on both technological advances and ethical considerations, it provides an understanding of AI's past, present, and future. This book is written for a broad audience, including both general readers and academic audiences who are interested in the history, development, and ethical implications of AI. It is particularly suited for students, researchers, and professionals in fields such as computer science, AI, mathematics, history of technology, and digital ethics.

CRC Press

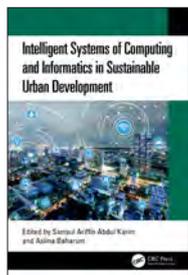
Market: Computer Engineering

October 2025: 234x156: 376pp: 44 illus, 20 halftones, 24 line drawings

Pb: 978-1-041-01198-9: **£56.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041011989

Intelligent Systems of Computing and Informatics in Sustainable Urban Development



Edited by **Samsul Ariffin Abdul Karim and Aslina Baharum**

This book explores intelligent systems in computing and informatics, focusing specifically on their role in advancing Sustainable Development Goal (SDG) No. 11 – Sustainable Cities and Communities. Practitioners in urban planning, technology, and related fields can utilize this book as a practical guide for implementing intelligent systems and best practices in making informed decisions. Researchers can also leverage the comprehensive coverage of the topic to inform and substantiate their own studies and investigations.

CRC Press

Market: Computing, Informatics, Sustainability

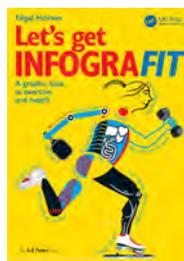
July 2025: 234x156: 226pp: 69 illus, 40 halftones, 29 line drawings

Pb: 978-1-032-84921-8: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032849218

Let's Get Infografit

A Graphic Look at Exercise and Health



Nigel Holmes

In *Joyful Infographics*, one of the leading graphic designers of recent times shows how a judicious use of humor can make infographics more understandable. Written in non-academic, easy to understand language, and with historical and contemporary visual examples presented throughout, this small book provides a short history of light-hearted graphics; it outlines eight clear ways to make graphics more understandable; it explores the importance of the audience; it shows you how to make information come alive during presentations through live-action 'performance' graphics; it discusses why joy and smiling are good for you; and it shows you how not to overdo it.

CRC Press

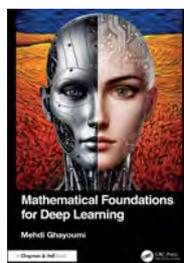
Market: Infographics / Design / Art & Visual Culture

October 2025: 246x174: 160pp: 186 illus, 156 halftones, 30 line drawings

Pb: 978-1-032-77727-6: **£47.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032777276

Mathematical Foundations for Deep Learning



Mehdi Ghayoumi, University of San Diego

This book bridges the gap between theoretical mathematics and practical applications in artificial intelligence. It delves into the fundamental mathematical concepts that power modern deep learning, equipping readers with the tools and knowledge needed to excel in the rapidly evolving field of AI. Designed for beginners and experts, the book makes mathematical ideas accessible through clear explanations, real-world examples, and targeted exercises. Readers will master core concepts in linear algebra, calculus, and optimization techniques, understand the mechanics of deep learning models, and apply theory to practice using frameworks like TensorFlow and PyTorch.

Chapman and Hall/CRC

Market: Computer Science

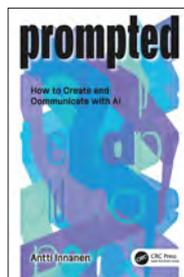
August 2025: 254x178: 386pp: 108 illus, 1 halftone, 107 line drawings

Hb: 978-1-032-69073-5: **£125.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032690735

PROMPTED

How to Create and Communicate with AI



Antti Innanen

PROMPTED offers a practical, human-centered approach to creating effective AI conversations, helping readers unlock the full potential of large language models while maintaining human agency and creativity. This comprehensive guide bridges theory and practice, offering both foundational understanding and advanced techniques for prompt engineering. The book covers essential concepts like prompt design patterns, chain-of-thought prompting, and role-based frameworks, while providing practical examples and real-world applications. Readers will learn how to craft precise instructions, manage context effectively, and develop systematic approaches for different use cases.

CRC Press

Market: Artificial Intelligence

December 2025: 234x156: 224pp: 3 illus, 3 line drawings

Pb: 978-1-041-06661-3: **£26.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041066613

Python for Excel Users

A Beginner's Guide



Chi-Chun Chou and David Wang

In today's data-driven world, the ability to efficiently analyze and interpret information is more crucial than ever, especially in the business sector. *"Python for Excel Users: A Beginner's Guide"* is tailored for business students and professionals who are proficient in Microsoft Excel but are ready to embark on their Python journey. As a powerful and versatile programming language, Python has become indispensable in data analysis. This book bridges the gap between Excel and Python by providing parallel exercises that demonstrate how Python can amplify business analytics tasks with unmatched efficiency and flexibility.

Chapman and Hall/CRC

Market: Computer Science

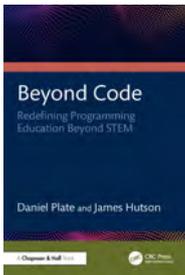
October 2025: 234x156: 200pp: 247 illus, 89 halftones, 158 line drawings

Pb: 978-1-032-93675-8: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032936758

Beyond Code

Redefining Programming Education Beyond STEM



Daniel Plate and James Hutson

AI-powered coding tools are revolutionizing software development, transforming programming from a specialized skill into an accessible educational practice across disciplines. This book investigates how tools such as Cursor AI, GitHub Copilot, and Replit's Ghostwriter are dismantling traditional barriers to entry for learners—particularly those from non-STEM backgrounds—by enabling natural language code generation, intelligent debugging, and interactive, project-based learning. Bridging the gap between theoretical instruction and practical application, the book serves as both a guide and a critical framework for integrating generative AI into curricula.

Chapman and Hall/CRC

Market: Programming

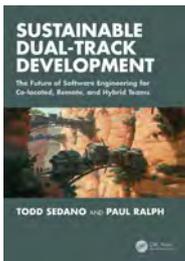
September 2025: 234x156: 280pp: 6 illus, 4 halftones, 2 line drawing

Pb: 978-1-041-06896-9: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041068969

Sustainable Dual-Track Development

The Future of Software Engineering for Co-located, Remote, and Hybrid Teams



Todd Sedano and Paul Ralph

This book advances dual-track development as a unifying framework for the best way of designing great products (user-centered design), the best way of delivering software efficiently (agile methods), and strategies for balancing present and future needs (sustainable development).

CRC Press

Market: Computer Science

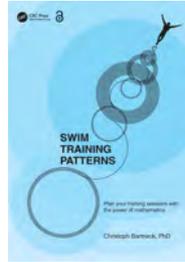
August 2025: 254x178: 272pp: 31 line drawings

Pb: 978-1-032-98310-3: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032983103

Swim Training Patterns

Plan your Training Sessions with the Power of Mathematics



Christoph Bartneck, University of Canterbury, New Zealand

This pioneering book integrates mathematics into swim training to create an intellectual journey into patterns. Exercise your body and mind with over 35 training programs derived from mathematical ideas. Dive into the history of mathematics and computer science to discover structures that will enrich your exercise routine. You don't need prior knowledge of mathematics or programming, just a curious mindset and the desire to swim interesting programs. This book will gently introduce you to the tools and knowledge you need to create programmatic training sessions.

CRC Press

Market: Programming, Sports Coaching, Swimming

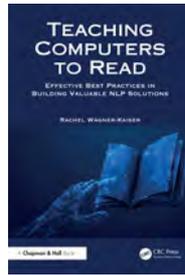
July 2025: 297x210: 248pp: 185 illus, 185 line drawings

Pb: 978-1-032-88007-5: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032880075

Teaching Computers to Read

Effective Best Practices in Building Valuable NLP Solutions



Rachel Wagner-Kaiser

Building Natural Language Processing (NLP) solutions that deliver ongoing business value is not straightforward. This book provides clarity and guidance on how to design, develop, deploy, and maintain NLP solutions that address real-world business problems. Through providing best practices across the lifecycle of NLP development, this handbook will help organizations—particularly technical teams—use critical thinking to understand how, when, and why to build NLP solutions, what the common challenges are, and how to address or avoid them. By doing so, they'll deliver consistent value to their stakeholders and deliver on the promise of AI and NLP.

Chapman and Hall/CRC

Market: Computer Science

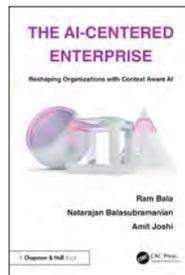
November 2025: 234x156: 232pp: 67 illus, 5 halftones, 62 line drawings

Pb: 978-1-032-48435-8: **£52.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032484358

The AI-Centered Enterprise

Reshaping Organizations with Context Aware AI



Ram Bala, Natarajan Balasubramanian and Amit Joshi

Most organizations are adding AI tools to their existing systems without rethinking their overall processes. However, to fully unlock the potential of AI, companies will eventually need to build their operations around it. Over time, businesses will transform into AI-Centered Enterprises (ACEs), using this advanced technology to create new value in internal marketplaces. Understanding this transformation requires a basic understanding of how businesses work. It also means recognizing the limits of AI and knowing where human expertise is still essential. This book offers that knowledge, along with real-life examples and practical tips to help businesses navigate this transformation.

Chapman and Hall/CRC

Market: Computer Science

July 2025: 229x152: 196pp: 17 illus, 17 line drawings

Pb: 978-1-032-89170-5: **£22.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032891705

SOFTWARE NETWORKING & SECURITY

Digitalization and Women's Rights

Volume 1



Edited by **Muharrem Kılıç**, Human Rights and Equality Institution of Türkiye, Turkey and **Sezer Bozkus Kahyaoglu**, Uni of South Africa Financial Gov Dep, South Africa

Series: Security, Audit and Leadership Series

It is essential to recognize the discrimination and emerging challenges that women will face, although these issues may not be explored in sufficient detail. This work has been thoughtfully created to fill that gap, serving as a crucial reference for those who care about these matters. By shedding light on existing deficiencies, this research promises to enrich future studies and provide invaluable insights for researchers who investigate and evaluate related works.

CRC Press

Market: Cybersecurity / Education

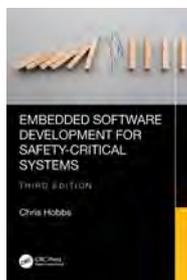
September 2025: 234x156: 320pp: 22 illus, 13 halftones, 9 line drawings

Hb: 978-1-032-82347-8: **£120.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032823478

3rd Edition

Embedded Software Development for Safety-Critical Systems



Chris Hobbs, QNX Software Systems, Canada

The third edition of *Embedded Software Development for Safety-Critical Systems* is about the creation of dependable embedded software. It is written for system designers, implementers and verifiers who are experienced in general embedded software development, but who are now facing the prospect of developing a software-based system for safety-critical applications.

CRC Press

Market: software security

October 2025: 234x156: 368pp: 96 illus, 96 halftones

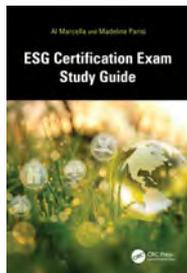
Pb: 978-1-032-98037-9: **£44.99**

Prev. Ed Pb: 978-0-367-33885-5

★ For **full contents** and more information, visit: www.routledge.com/9781032980379

TEXTBOOK

ESG Certificate Exam Study Guide



Madeline Parisi and **Al Marcella**

This two-tiered program is designed for professionals who possess a general understanding of ESG principles and concepts, however, desire to increase, solidify, and demonstrate that knowledge and understanding. This study guide will assist candidates with the overall Certification program process – from initial application to study materials and sample questions, designed to prepare the candidate to take the ESG Certification TM examination.

CRC Press

Market: Corporate Responsibility

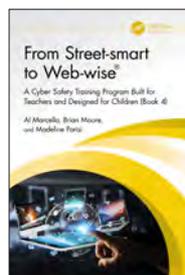
November 2025: 234x156: 152pp: 5 illus, 5 line drawings

Pb: 978-1-032-67250-2: **£34.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032672502

From Street-smart to Web-wise®

A Cyber Safety Training Program Built for Teachers and Designed for Children (Book 4)



Al Marcella, Brian Moore and **Madeline Parisi**

Parents consider educators their partners to create cyber-secure spaces. This book stands as a framework of commitment to that partnership whether you are in an elementary school environment or a child-serving agency. It confirms proactive steps in equipping our young learners with the awareness and skills they need to tread the digital world securely are being taken.

CRC Press

Market: Cybersecurity / Education

September 2025: 254x178: 328pp: 54 illus, 38 halftones, 16 line drawings

Pb: 978-1-032-73864-2: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032738642

Guardians of the Digital Age

Securing the Future



Elçin Biren

Series: Security, Audit and Leadership Series

A thrilling bridge between past and future, this book introduces parents and teens to the evolution of the internet and the most essential skill of our time—digital security.

CRC Press

Market: Online Security

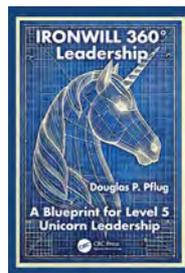
September 2025: 234x156: 200pp

Pb: 978-1-032-81839-9: **£24.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032818399

Ironwill 360° Leadership

A Blueprint for Level 5 Unicorn Leadership



Douglas P. Pflug

Series: Security, Audit and Leadership Series

This is a battle-tested, high-performance leadership manual forged from decades of elite experience in policing, coaching, and executive mentorship. Inside, you'll find the real-world strategies, hard-won lessons, and non-negotiable mindsets required to master Level 5 Leadership—the rare balance of professional will and personal humility that defines the most exceptional leaders.

CRC Press

Market: Leadership

October 2025: 234x156: 216pp: 29 illus, 29 halftones

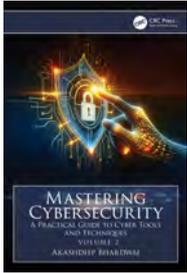
Pb: 978-1-041-07397-0: **£29.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041073970

TEXTBOOK

Mastering Cybersecurity

A Practical Guide to Cyber Tools and Techniques (Volume 2)



Akashdeep Bhardwaj, University of Petroleum and Energy Studies

Mastering Cybersecurity – A Practical Guide to Cyber Tools & Techniques (Volume 2) offers a hands-on, real-world approach to developing modern cybersecurity skills. This volume builds on foundational concepts to provide readers with practical techniques and toolsets that are essential in today's evolving threat landscape. Each chapter dives into a critical area of cybersecurity, emphasizing applied learning through real-world scenarios, case studies, and step-by-step exercises.

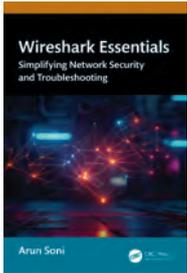
CRC Press

Market: Cybersecurity

October 2025: 234x156: 286pp: 262 illus, 262 halftones

Pb: 978-1-032-89392-1: **£44.99**★ For **full contents** and more information, visit: www.routledge.com/9781032893921**Wireshark Essentials**

Simplifying Network Security and Troubleshooting

**Arun Soni**

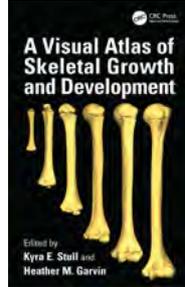
Dive into the capabilities of Wireshark with "Wireshark Essentials," a concise guide focused on utilizing packet analysis for network security and troubleshooting. This book is ideal for IT professionals, network administrators, and cybersecurity enthusiasts.

CRC Press

Market: Network Security

September 2025: 234x156: 248pp: 99 illus, 96 halftones, 3 line drawings

Pb: 978-1-032-88709-8: **£44.99**★ For **full contents** and more information, visit: www.routledge.com/9781032887098

FORENSIC SCIENCE
A Visual Atlas of Skeletal Growth and Development

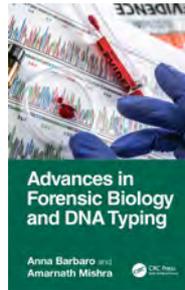
Edited by **Kyra E. Stull**, University of Nevada, Reno, USA and **Heather M. Garvin**, Des Moines University, USA

A Visual Atlas of Skeletal Growth and Development provides professionals, practitioners, and students with a single resource that visually illustrates the skeletal growth and development of individual human bones from birth until skeletal maturity. This book will be a vital reference for professionals and students in biological anthropology, human biology, health sciences, and is a useful resource for individuals interested in learning about the growth and development of the skeleton through images and empirical data.

CRC Press

Market: Forensic / Anthropology / Medical

August 2025: 280x210: 222pp: 219 illus, 181 halftones, 38 line drawings

Hb: 978-1-032-75485-7: **£64.99**★ For **full contents** and more information, visit: www.routledge.com/9781032754857**Advances in Forensic Biology and DNA Typing**

Anna Barbaro, Studio Indagini Mediche E Forensi, Italy and **Amarnath Mishra**, Amity University, India

Advances in Forensic Biology and DNA Typing examines a broad range of forensic DNA applications and topics, based on internationally recognized best practices. This book is a highly illustrated guide that will serve as a useful reference for forensic laboratory professionals, investigators, and students, as well as legal professionals.

CRC Press

Market: Forensic Science / Genetics and DNA

June 2025: 234x156: 426pp: 51 illus, 41 halftones, 10 line drawings

Hb: 978-1-032-72076-0: **£64.99**★ For **full contents** and more information, visit: www.routledge.com/9781032720760**Forensic Pathology of Unexpected and Unexplained Deaths****Sudhir K. Gupta**, AIIMS, India.

Sudden, unexpected, and unexplained deaths present unique difficulties for forensic teams, requiring meticulous investigation and analysis. This authoritative text provides a critical examination of postmortem findings. It incorporates radiological imaging and histopathological features to enhance forensic diagnosis, exploring possible causes of death and the medico-legal considerations essential to forensic investigations. An essential resource for postgraduate students in Forensic Medicine and Toxicology, it is also invaluable for practitioners working in forensic pathology, law enforcement, and the legal system.

CRC Press

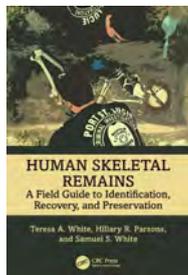
Market: medicine

September 2025: 280x210: 320pp: 497 illus, 474 halftones, 23 line drawings

Hb: 978-1-032-75844-2: **£180.00**★ For **full contents** and more information, visit: www.routledge.com/9781032758442

Human Skeletal Remains

A Field Guide to Identification, Recovery, and Preservation



Teresa A. White, Bone and Stone Anthrosciences, USA, **Hillary R. Parsons**, Odyssey Anthropology, USA and **Samuel S. White**

Human Skeletal Remains is a step-by-step field guide to teach proper recovery techniques when a forensic anthropologist is unavailable for immediate scene responses. This book is an illustrative tool designed to accompany you on scene. Use it to identify the bones you locate, then follow the instructions to recover them. Get it dirty!

CRC Press

Market: Forensic Science / Anthropology

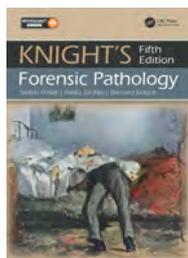
September 2025: 276x219: 120pp: 332 illus, 331 halftones, 1 line drawing

Pb: 978-1-032-62195-1: **£53.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032621951

5th Edition

Knight's Forensic Pathology



Stefan Pollak, Professor **Pekka Saukko** and **Bernard Knight**, University of Wales College of Medicine, Cardiff, UK

Knight's Forensic Pathology is a standard reference book worldwide. The 5th edition is comprehensively revised and includes an ebook code. The unambiguous style, practical orientation, and an approach based strictly on scientific evidence together with the experience of the authors all contribute to this success. A cautious and self-critical interpretation of autopsy findings is required for a correct diagnosis, and these findings are the cornerstone for investigating unexplained fatalities. Where possible, macroscopic evaluation should be complemented by visiting the scene of death, pre-autoptic imaging, biochemical

and toxicological analyses as well as histological examinations.

CRC Press

Market: Forensics & Criminal Justice

December 2025: 280x210: 750pp: 515 illus, 461 halftones, 54 line drawings

Hb: 978-1-041-13001-7: **£195.00**

Prev. Ed Hb: 978-0-340-97253-3

★ For **full contents** and more information, visit: www.routledge.com/9781041130017

2nd Edition

Mathematical Methods for Accident Reconstruction

A Forensic Engineering Perspective



Harold Franck, Advanced Engineering Associates Inc, USA and **Darren Franck**, Advanced Engineering Associates Inc, USA

Mathematical Methods for Accident Reconstruction: A Forensic Engineering Perspective, Second Edition demonstrates the application of mathematics to modeling accident reconstructions involving a range of moving vehicles, including automobiles, small and large trucks, bicycles, motorcycles, all-terrain vehicles, and construction equipment such as hoists and cranes. Exploring a broad range of accident scenarios, the breadth and depth of the book's coverage makes *Mathematical Methods for Accident Reconstruction, Second Edition* a critical reference for engineers and scientists who perform vehicular accident reconstructions.

CRC Press

Market: Forensic Science / Vehicle Engineering

September 2025: 234x156: 352pp: 142 illus, 35 halftones, 107 line drawings

Hb: 978-1-032-71472-1: **£64.99**

Prev. Ed Hb: 978-1-4200-8897-7

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4th Edition

Practical Bomb Scene Investigation



James T. Thurman

Series: Practical Aspects of Criminal and Forensic Investigations

Practical Bomb Scene Investigation, Fourth Edition details the evidence collection and investigative processes undertaken—at the scene of an explosion—by improvised explosive device (IED) specialists, including bomb scene technicians and post-blast investigators. With input provided over the years from working post blast investigators from the federal, state, and municipal sectors, the Fourth Edition of *Practical Bomb Scene Investigation* is an invaluable resource for those professionals involved in bombing investigations.

CRC Press

Market: Forensics & Criminal Justice

November 2025: 254x178: 608pp: 531 illus, 509 halftones, 22 line drawings

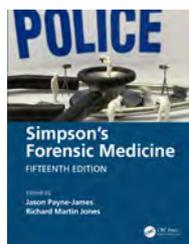
Hb: 978-1-032-86048-0: **£66.99**

Prev. Ed Hb: 978-1-4987-7308-9

★ For **full contents** and more information, visit: www.routledge.com/9781032860480

TEXTBOOK • 15th Edition

Simpson's Forensic Medicine



Edited by **Jason Payne-James**, William Harvey Research Institute, Queen Mary University of London, London and **Richard Martin Jones**, Wales Institute of Forensic Medicine, Cardiff

Simpson's Forensic Medicine 15e contains all that the generalist or student needs to know about the interface between medicine and the law. It's reputation as one of the world's leading introductory texts in the field of forensic medicine reflects the easy to read and informative text, complemented by numerous colour photographs. Reflecting the most up to date forensic best practice, the comprehensive coverage encompasses forensic

pathology, the pathology of trauma, and common topics in forensic pathology such as pressure to the neck and asphyxia deaths, the impact of heat, cold & electrical trauma, and immersion and drowning.

CRC Press

Market: Forensics & Criminal Justice

September 2025: 246x189: 426pp: 422 illus, 422 halftones

Pb: 978-1-032-42434-7: **£39.99**

Prev. Ed Pb: 978-1-4987-0429-8

★ For **full contents** and more information, visit: www.routledge.com/9781032424347

The Protective Intelligence Advantage

Mitigating the Rising Threat to Prominent People



Fred Burton and **Scott Stewart**, TorchStone Global, USA

The world reacted in horror to the graphic security camera footage of United Healthcare CEO Brian Thompson being gunned down on a Manhattan sidewalk as he was on his way to attend a scheduled investor conference. Since this murder has already spawned copycat attacks, this book is especially needed at this moment in time. After a lifetime of investigating attacks on high-profile persons, heads of state, and celebrities the authors will be the first to examine the murder of Brian Thompson in detail, and use the lessons learned from that attack (and others) to illustrate how protective intelligence can be used to identify threats and prevent attacks.

CRC Press

Market: Personal Security

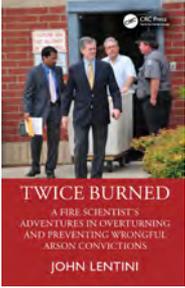
October 2025: 234x156: 256pp: 22 illus, 21 halftones, 1 line drawing

Hb: 978-1-041-08960-5: **£34.99**

★ For **full contents** and more information, visit: www.routledge.com/9781041089605

Twice Burned

A Fire Scientist's Adventures in Overturning and Preventing Wrongful Arson Convictions



John Lentini, Scientific Fire Analysis, USA

This book tells the story of renowned fire investigator John J. Lentini's 50 years as a forensic scientist. In recounting his most significant cases, Lentini highlights the critical challenges faced by forensic science, including ignorance, cognitive biases, and errors that have led to wrongful convictions. The book is a testament to the power of collaboration between scientists and lawyers in correcting injustices that occur at the intersection between science and the law. Written in an accessible style, this book is perfect for fire science professionals, litigators, and discerning true crime readers.

CRC Press

Market: Forensic / Fire Investigation

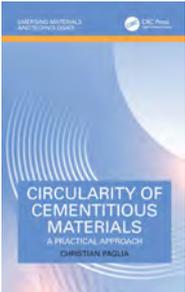
October 2025: 234x156: 320pp: 28 illus, 28 halftones

Hb: 978-1-032-99386-7: **£34.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032993867

Circularity of Cementitious Materials

A Practical Approach



Christian Paglia

Series: Emerging Materials and Technologies

Recycling of building and infrastructure materials are global concerns driven by natural resource preservation and sustainable development needs. This practical book explores the strategies necessary for successful recycling of cement-based materials to achieve sustainable and long service life. It investigates recycled cementitious materials to ensure decisive implementation and meet industry and societal challenges. Aimed at readers in materials, civil, and construction engineering, this book offers guidance to professionals and researchers developing strategies for sustainable application of cement-based materials.

CRC Press

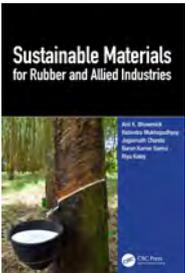
Market: Materials and Civil Engineering

August 2025: 234x156: 436pp: 142 illus, 118 halftones, 24 line drawings

Hb: 978-1-032-60681-1: **£130.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032606811

Sustainable Materials for Rubber and Allied Industries



Anil K. Bhowmick, Rabindra Mukhopadhyay, Jagannath Chanda, Barun Kumar Samui and Riya Koley

Traditional rubber products contain rubber and multiple additives; many of these materials are obtained from fossil fuel sources. The need for the use of more sustainable materials in the rubber industry is clear and advances are being made toward this goal. This unique book highlights these developments in the science and technology of sustainable materials in the rubber industry and covers both rubber materials and the ingredients necessary to make a product. This book is aimed at engineers, scientists, and researchers in materials science, chemistry, and related fields who are seeking to provide a sustainable alternative to this crucial industry.

CRC Press

Market: Polymer Science and Engineering

September 2025: 234x156: 708pp: 317 illus, 211 halftones, 106 line drawings

Hb: 978-1-032-79513-3: **£150.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032795133

The Essentials of Composite Materials

A Guide for Engineering and Beyond



Germán A. Pacheco

The Essentials of Composite Materials: A Guide for Engineering and Beyond combines the theory of composite materials and their applications, with a focus on the main industries where they are used. Using the author's experience as a naval architect, boat builder, and composites designer, this book offers a guide to the selection of the most appropriate production processes, procedures, and materials for a particular project. It comprehensively covers polymer matrix composites, explaining what composite materials are, their components, and what they can be used for. It serves as a practical tool for readers working in the composite fields as well as those looking to enter it.

CRC Press

Market: Composite Materials

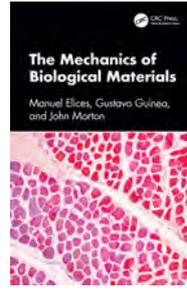
September 2025: 234x156: 290pp: 176 illus, 136 halftones, 40 line drawings

Hb: 978-1-032-93279-8: **£79.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032932798

TEXTBOOK

The Mechanics of Biological Materials



Manuel Elices, Gustavo Guinea and John Morton

This book introduces the mechanical principles governing the behaviour of a wide range of biological materials. The approach is systematic and based on one-dimensional (fibres), two-dimensional (membrane), and three-dimensional (bulk) biological materials. The essential mathematical tools are developed from first principles and applied to materials as diverse as spider silk, blood vessels, and bone. The text is aimed at students of chemistry, materials engineering, and biology, who do not have a background in mechanics but wish to further their knowledge of the mechanics of biological materials.

CRC Press

Market: Materials Science and Engineering

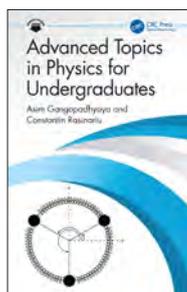
July 2025: 254x178: 386pp: 247 illus, 29 halftones, 218 line drawings

Hb: 978-1-032-89277-1: **£89.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032892771



PHYSICS

TEXTBOOK**Advanced Topics in Physics for Undergraduates**

Asim Gangopadhyaya, Loyola University Chicago, USA and **Constantin Rasinariu**, Loyola University Chicago, USA

This book explores classical mechanics, electrodynamics, and quantum mechanics beyond the standard introductory courses. Designed to support departments with limited resources, this book integrates these advanced topics into a single, cohesive volume, offering students a unified perspective on fundamental physical principles. This book serves as an invaluable guide for undergraduate students seeking to deepen their knowledge of physics, preparing them for further academic study or careers in physics and related fields. Its clear explanations and structured approach make it accessible to learners looking to advance their understanding beyond traditional coursework.

CRC Press

Market: Physics

October 2025: 234x156: 258pp: 92 illus, 92 line drawings

Hb: 978-0-367-77582-7: **£91.99**

★ For **full contents** and more information, visit: www.routledge.com/9780367775827

AI Robotics

Ethics, Algorithms, and Technology of Artificial Intelligence-Powered Robots



Vinod Kumar Khanna, CSIR-Central Electronics Engineering Research Institute, India

AI robots can learn from their experiences, make decisions in real-time, understand natural language and human gestures, and utilize computer vision to perceive and comprehend their environment. Beginning with the rudimentary concepts of artificial intelligence, *AI Robotics: Ethics, Algorithms, and Technology of Artificial Intelligence-Powered Robots* explores the intersection of robotics and physics and emphasizes the need for strict adherence to ethical principles in relation to overall progress and the development of humankind.

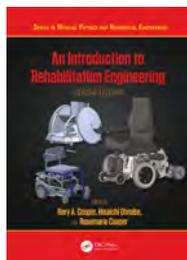
CRC Press

Market: Physics

October 2025: 234x156: 256pp: 86 illus, 30 halftones, 56 line drawings

Pb: 978-1-032-69519-8: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032695198

TEXTBOOK • 2nd Edition**An Introduction to Rehabilitation Engineering**

Edited by **Rory A. Cooper**, **Hisaichi Ohnabe** and **Rosemarie Cooper**

Series: Series in Medical Physics and Biomedical Engineering

Introduction to Rehabilitation Engineering, Second Edition offers a concise yet thorough foundation in a critical and rapidly evolving field—inviting further exploration, innovation, and impact. These features make the book a valuable resource for students, practitioners, and anyone interested in the field of rehabilitation engineering.

CRC Press

Market: Physics

November 2025: 254x178: 368pp: 113 illus, 92 halftones, 21 line drawings

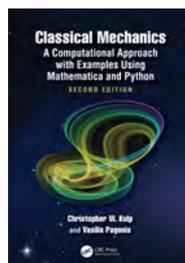
Hb: 978-1-032-12152-9: **£91.99**

Prev. Ed Hb: 978-0-8493-7222-3

★ For **full contents** and more information, visit: www.routledge.com/9781032121529

TEXTBOOK • 2nd Edition**Classical Mechanics**

A Computational Approach with Examples Using Mathematica and Python



Christopher W. Kulp, Lycoming College, Williamsport, PA, USA and **Vasilis Pagonis**, McDaniel College, Westminster, MD, USA

Classical Mechanics: A Computational Approach with Examples using Mathematica and Python provides a unique introduction to classical mechanics, with a focus on computational methods by providing clear and thorough coverage of key topics and includes integrated instructions and treat and ents of computation. The newly updated second edition include two new appendices instructing the reader in both the Python and Mathematica languages. All worked example problems contain both Python and Mathematica code. New end-of-chapter

problems explore the application of computational methods to classical mechanics problems.

CRC Press

Market: Physics

August 2025: 254x178: 614pp: 186 illus, 2 halftones, 184 line drawings

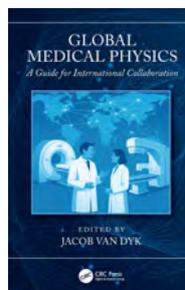
Pb: 978-1-032-59051-6: **£74.99**

Prev. Ed Pb: 978-1-138-49528-9

★ For **full contents** and more information, visit: www.routledge.com/9781032590516

Global Medical Physics

A Guide for International Collaboration



Edited by **Jacob Van Dyk**

Global Medical Physics: A Guide for International Collaboration provides essential guidance for medical physicists and other healthcare professionals seeking to collaborate internationally in clinical, educational, and research settings. With the growing interest in global health initiatives, this book addresses the complexities of working across diverse healthcare environments, particularly in low-resource settings. It explores the increasing role of medical physicists in international education, training, and research collaborations, emphasizing the importance of cultural competence, ethical considerations, and overcoming technological barriers.

CRC Press

Market: Medical Physics

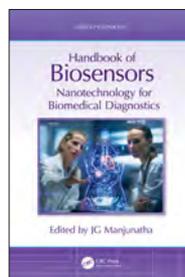
November 2025: 234x156: 160pp: 13 illus, 13 line drawings

Pb: 978-1-032-86489-1: **£19.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032864891

Handbook of Biosensors

Nanotechnology for Biomedical Diagnostics



Edited by **J.G. Manjunatha**

Series: Series in Sensors

Biosensors: Nanotechnology for Biomedical Diagnostics provides a comprehensive overview of the transformative role played by nanotechnology in the development of biosensors for biomedical applications. Highlighting interdisciplinary collaboration and technological innovation, this book demonstrates how to accelerate the translation of nanotechnology-enabled biosensors from the laboratory to the clinic, ultimately improving patient outcomes and quality of life.

CRC Press

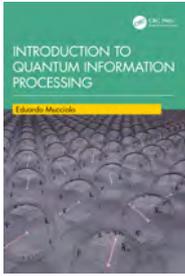
Market: Physics

November 2025: 234x156: 408pp: 59 illus, 48 halftones, 11 line drawings

Hb: 978-1-032-87341-1: **£165.00**

★ For **full contents** and more information, visit: www.routledge.com/9781032873411

TEXTBOOK

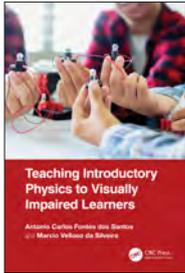
Introduction to Quantum Information Processing**Eduardo Mucciolo**

This book introduces quantum computing and quantum communications at the undergraduate level for students in the physical sciences, engineering, and mathematics, assuming no prior knowledge of quantum mechanics. It is a self-contained guide assuming only that the reader is familiar with physics at the college level, calculus (up to and including ordinary differential equations), and some matrix algebra and complex numbers. The book brings the reader up to speed with fundamental concepts in quantum information processing and builds a working knowledge of basic quantum algorithms, quantum error correction, and quantum communication protocols.

CRC Press

Market: Physics

September 2025: 234x156: 264pp: 83 illus, 3 halftones, 80 line drawings

Pb: 978-1-032-77589-0: **£48.99**★ For **full contents** and more information, visit: www.routledge.com/9781032775890**Teaching Introductory Physics to Visually Impaired Learners****Antônio Carlos Fontes dos Santos and Marcio Velloso da Silveira**

Teaching Introductory Physics to Visually Impaired Learners provides a gateway to understanding the difficulties encountered by this audience and provides ways for teachers to embrace this challenge. The concept of inclusion is discussed in light of the historical evolution of the achievements of people with disabilities and the development of reading and writing in Braille, in addition to other more modern tools, such as cell phone applications. The remaining chapters present methodologies for teaching mechanics, waves, electrodynamics, optics and modern physics in classes where there are one or more students with visual impairments.

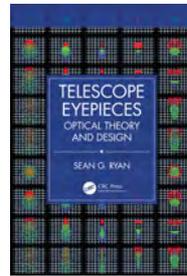
CRC Press

Market: Physics

October 2025: 234x156: 208pp: 26 illus, 18 halftones, 8 line drawings

Pb: 978-1-032-82971-5: **£39.99**★ For **full contents** and more information, visit: www.routledge.com/9781032829715**Telescope Eyepieces**

Optical Theory and Design

**Sean G. Ryan**

Telescope Eyepieces: Optical Theory and Design explores the wide range of eyepiece designs. It introduces optics theory progressively to build understanding of how lenses control light in an optical system generally and in eyepieces specifically, linking optics fundamentals, design evolution and the implications for image quality. The book presents a logical narrative starting with Snell's law of refraction at a flat surface, progressing to paraxial and real rays at spherical and aspherical surfaces, lenses and thin-lens systems. It demystifies the origin of aberrations by considering wavefront deviations, all brought to life in the context of the familiar eyepiece.

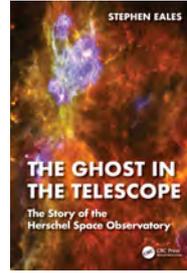
CRC Press

Market: Physics

November 2025: 234x156: 232pp: 45 illus, 21 halftones, 24 line drawings

Pb: 978-1-041-13254-7: **£42.99**★ For **full contents** and more information, visit: www.routledge.com/9781041132547**The Ghost in the Telescope**

The Story of the Herschel Space Observatory

**Stephen Eales**

The Ghost in the Telescope is an insider's account of the Herschel Space Observatory, which was built to answer the questions of how stars and galaxies were born. Written in an engaging manner for a general audience, the book tells the stories of the telescope itself, the discoveries it made, and the engineers and astronomers who made and used it. The book, based on the author's own experience and interviews with the key astronomers and engineers, tells the story of the mission, from its original concept on a piece of paper in Venice to the moment after the end of the mission when the engineers had to decide whether to crash the spacecraft into the Moon.

CRC Press

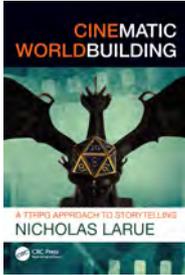
Market: Astrophysics / Space Science

August 2025: 254x178: 270pp: 115 illus, 87 halftones, 28 line drawings

Pb: 978-1-032-04382-1: **£19.99**★ For **full contents** and more information, visit: www.routledge.com/9781032043821

Cinematic Worldbuilding

A TTRPG Approach to Storytelling



Nicholas LaRue

Everybody has a story in them. Some people lack the language and the tools to tell that story effectively. As an avid Tabletop Role-Playing Game player, I'm amazed at people's ability to tell stories on the spot. Both the players and the game master are creating worlds in their minds and playing out the events, using improv, in real-time. This book will contain insights and interviews from some of today's most respected game masters, players, actual play actors, and we'll also hear from some of the people behind the scenes responsible for creating these games, and how they view worldbuilding and storytelling for their audiences.

CRC Press

Market: Games & Animation

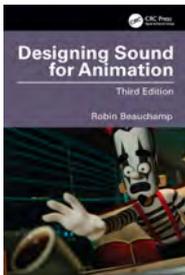
July 2025: 229x152: 280pp: 48 illus, 45 halftones, 3 line drawings

Pb: 978-1-032-88515-5: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032885155

3rd Edition

Designing Sound for Animation



Robin Beauchamp

Sound is just as crucial an aspect to your animation as your visuals. Whether you're looking to create a score, ambient noise, dialog, or a complete soundtrack, you'll need sound for your piece. This nuts-and-bolts guide to sound design for animation will explain the theory and workings behind sound for image and provide an overview of the systems and production path to help you create your soundtrack. Follow the sound design process along with animated shorts and learn how to use the tools and techniques of the trade. Enhance your piece and learn how to design sound for animation.

CRC Press

Market: Gaming & Animation

September 2025: 229x152: 362pp: 228 illus, 222 halftones, 6 line drawings

Pb: 978-1-032-74518-3: **£49.99**

Prev. Ed Pb: 978-0-240-82498-7

★ For **full contents** and more information, visit: www.routledge.com/9781032745183

2nd Edition

Designing the User Experience of Game Development Tools

David Lightbown

The book begins with the foundations of user experience and how they apply to game development tools, then guides you through the User-Centered Design process – the gold standard in user experience design – which involves watching users work, understanding their goals, designing efficient and learnable user interfaces, and refining them through targeted evaluation techniques.

A K Peters/CRC Press

Market: Game Development

January 2026: 234x156: 250pp

Pb: 978-1-032-98260-1: **£44.99**

Prev. Ed Pb: 978-1-4822-4019-1

★ For **full contents** and more information, visit: www.routledge.com/9781032982601

2nd Edition

Directing the Story

Professional Storytelling and Storyboarding for Animation, Comics and Live Action



Francis Glebas

This book grew out of desperate need. I was a storyboard artist at Disney and had no idea what I was doing. At Disney I was surrounded by amazing talents. I went into work early and typed up notes on what I was learning. This experience became *Directing the Story*. I'm currently working on a new theory of story which shows how all the parts of story, character, plot and story

work together. I'm including the beginning basics of this theory which allows my students to come up with a story in 7 minutes. Plot takes longer.

CRC Press

Market: Gaming & Animation

October 2025: 276x219: 360pp: 460 illus, 460 halftones

Pb: 978-1-032-75306-5: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032753065

Extending and Customizing Unreal Engine Editor

Methods for Improving Workflow and More Robust Scripting



Roger Mattsson

This book provides a broad overview of editor extensions and modifications that can be made to speed up your workflow in the Unreal Engine. It covers tips for both initial content creation as well as for debugging already existing content. Whether you are making a small indie game or an AAA game, this book will help you and your team in creating the tools needed to improve your workflow.

CRC Press

Market: Game Development

December 2025: 234x156: 208pp: 50 illus, 50 halftones

Pb: 9781032840406: **£49.99**

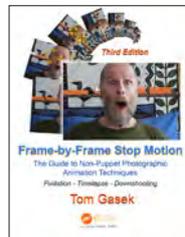
eBook: 978-1-003-51174-8

★ For **full contents** and more information, visit: www.routledge.com/9781032840406

3rd Edition

Frame-By-Frame Stop Motion

The Guide to Non-Puppet Photographic Animation Techniques



Tom Gasek, Rochester Institute of Technology, New York, USA

Single frame filmmaking has been around as long as film itself. It is the ancestor to modern day special effects and animation. Despite its age-old practice, single frame film making and stop-motion animation continues to influence media and culture with its magic. Interviews from experts in the field offer not only inspiration but also help readers learn how to apply skills and new applications. The companion website offers further instruction, recommended films, tools and resources for both the novice and the expert.

CRC Press

Market: Gaming & Animation

August 2025: 229x152: 238pp: 191 illus, 191 halftones

Pb: 978-1-032-81744-6: **£48.99**

Prev. Ed Pb: 978-1-4987-8061-2

★ For **full contents** and more information, visit: www.routledge.com/9781032817446

Game Development with Godot 4

A Complete Introduction



Alan Thorn, National Film & Television School, Upminster, UK

Godot is a rapidly growing free and open-source game engine for creating 2D and 3D games, and interactive applications, on many platforms including desktop and mobile. There has been intense interest in this engine among game developers worldwide. This book explores: nodes, scenes, hierarchies, import workflows, scripting, animations, user interfaces, working with resources and creating gameplay elements, among others.

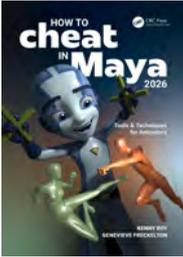
CRC Press
Market: Game Development
 November 2025: 234x156: 382pp: 373 illus, 373 halftones
 Pb: 978-1-032-75924-1: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032759241

6th Edition

How to Cheat in Maya 2026

Tools & Techniques for Animators



Kenny Roy and **Genevieve Freckelton**

How to Cheat in Maya 2026 is more than a software manual - it's a complete guide to working smarter, animating faster, and thinking like a professional. This edition covers Maya's latest tools and features, but more importantly, it focuses on real-world workflows and the creative process behind great animation. You'll find not just the how, but the why behind each technique, helping you build intuition and confidence in your craft. Whether you're learning the ropes or refining your skills, this book is designed to remove friction, streamline your process, and let you focus on what matters most: crafting compelling animated performances.

CRC Press
Market: Gaming & Animation
 October 2025: 254x178: 350pp: 394 illus, 389 halftones, 5 line drawings
 Pb: 978-1-032-88309-0: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032883090

Mastering Character Design

Design with Intent and Purpose



Caroline Hu

This book is a comprehensive guide for artists looking to master character design, no matter their chosen style. It offers practical insights into the core principles used in animated projects, helping you understand how to accurately draw and construct shapes, as well as the key elements of design. With these skills, you'll be able to design characters with intention and draw them

in a way that feels both effective and engaging.

CRC Press
Market: Games & Animation
 September 2025: : 180pp: 120 illus, 120 halftones
 Pb: 978-1-032-98503-9: **£48.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032985039

Mastering Community Management

Chaos, Compassion, and Connections in Games



Victoria Tran

Game communities are inevitable – in fact, they're one of the main features of a game. How can our online interactions be better, kinder, more productive conversations? Consumers are more inundated with typical marketing schemes than ever, and social media has only become a more powerful, yet chaotic tool over the years. Leave the high-level concepts behind to dig deep and see how community managers can tackle ever-changing algorithms and an entirely digital world.

CRC Press
Market: Gaming
 July 2025: 229x152: 284pp: 19 illus, 6 halftones, 13 line drawings
 Pb: 978-1-032-54042-9: **£43.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032540429

Taking Video Out of the Game

A Game Developer's Guide to Total Blind Accessibility



Brandon Cole

This book aims to provide information and in-routes to one of the most complex forms of video game accessibility. It promises to explain how a developer might make their game accessible to the totally blind. It will break down what that means and provide plenty of examples and ideas for how developers might achieve total blind accessibility, even in the largest, most complex games. As an experienced accessibility consultant who has worked on multiple AAA titles, the author brings a wealth of practical experience to the reader.

CRC Press
Market: game accessibility
 September 2025: 229x152: 122pp
 Pb: 978-1-032-55739-7: **£52.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032557397

The Complete Guide to Videogame Performance Directing

Place, Time, Action



Tom Keegan

This book teaches the complex, sometimes confounding, and often beautiful art of directing live performance for videogames. Starting from a clear and comprehensive introduction to the nuts and bolts of directing on the motion capture floor and in the voiceover booth, the book dives deeper with concrete examples from the author's 25-year career directing seminal games from the early years to today's blockbusters. This book is sure to be an essential resource for directors, actors, voice-over artists, and game developers who want to master videogame performance.

CRC Press
Market: Game Development
 July 2025: 234x156: 202pp: 17 illus, 17 halftones
 Pb: 978-1-032-91454-1: **£49.99**

★ For **full contents** and more information, visit: www.routledge.com/9781032914541

The Definitive Game Narrative Guide



Brian Kindregan and Diandra Anne Lasrado

The Definitive Game Narrative Guide is the ultimate start and end point for storytelling in video games. Whether you're an aspiring writer or a seasoned game developer, this book offers an in-depth, comprehensive look at the entire narrative process. An essential tool for anyone looking to level up their understanding of game narrative. This book will help you bring unforgettable stories to life in interactive form.

CRC Press

Market: Game Development

September 2025: 229x152: 312pp: 34 illus, 13 halftones, 21 line drawings

Pb: 978-1-041-03689-0: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781041036890

2nd Edition

The Fundamentals of C/C++ Game Programming

Using Target-based Development



Brian Beuken

This book gives novice coders an understanding of the methods and techniques used in professional games development. Projects are designed to help develop and strengthen problem solving and basic C/C++ skills. The book also helps to develop familiarity with Microsoft Visual Studio's ability to target and use fixed/restricted hardware, which are key skills in console development. This second edition has been fully updated in line with recent hardware changes, with new and updated cross platform code examples hosted at the companion website.

This book will be useful to all novice coders looking to learn the

fundamentals of C/C++ game programming.

CRC Press

Market: Game Development

October 2025: 254x178: 464pp: 152 illus, 129 halftones, 23 line drawings

Pb: 978-1-032-86380-1: **£61.99**

Prev. Ed Pb: 978-1-4987-8874-8

★ For full contents and more information, visit: www.routledge.com/9781032863801

The Video Game Writer's Guide to Surviving an Industry That Hates You



Richard Dansky

There have been many books written about how to write for games, but just as important as creating the deliverables is knowing how to do the job itself. By turns humorous, horrifying, and hopeful, this is a user's manual to a role that is frequently misunderstood and underappreciated. Drawing on over two decades' experience in the game writing trenches, Richard Dansky takes you on a journey through the things you must know in order to survive and thrive as a game writer.

CRC Press

Market: Games & Animation

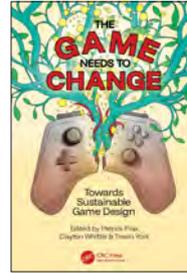
August 2025: 280x210: 140pp

Pb: 978-1-032-97261-9: **£53.99**

★ For full contents and more information, visit: www.routledge.com/9781032972619

The Game Needs to Change

Towards Sustainable Game Design



Edited by **Patrick Prax, Clayton Whittle and Trevin York**

This book shows how games can play their part in addressing climate change and how we can sustainably make games for sustainability. Based on both industry practice and research, the chapters within give voice to those who are working on sustainability *in* gaming and *through* gaming. These perspectives offer pragmatic recommendations and concrete starting points for working towards sustainability, showing you how to get started no matter your role. The book will appeal to game makers who want to address sustainability through the content and message of their creative work, as well as members of the wider game industry who work towards more sustainable practices.

CRC Press

Market: Game Development

November 2025: 234x156: 224pp: 10 illus, 8 halftones, 2 line drawings

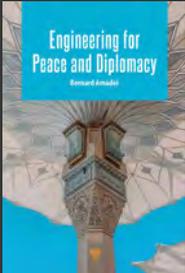
Pb: 978-1-032-83619-5: **£49.99**

★ For full contents and more information, visit: www.routledge.com/9781032836195



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Engineering for Peace and Diplomacy

Bernard Amadei

This book makes a compelling argument for the role of the engineering profession in advancing human development and security and its contribution to various peacebuilding and diplomatic efforts in the 21st-century world. The book emphasizes the importance of developing programs such as peace engineering and engineering diplomacy and training globally engaged engineers with attitudes, skills, knowledge, and life-long experience to address the challenges of the 21st century.

August 2025: 229x152: 454pp: 47 illus, 1 halftone, 46 line drawings
Pb: 978-981-5129-75-5: **£37.99**
www.routledge.com/9789815129755

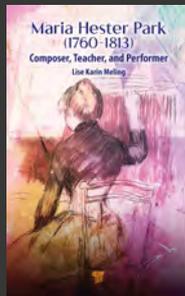


Building a Global University Successful Strategies and Case Studies

Edited by **Muralidhar Miryala**

The book is divided into two parts. The first part delves into the global strategies for establishing successful universities worldwide, highlighted by the vice chancellors and presidents from renowned universities, including the University of Cambridge, UK; TU Ilmenau, Germany; University of Applied Sciences Upper Austria, Austria; and Ahlia University, Bahrain. The second part discusses pilot projects and experiences from Shibaura Institute of Technology (SIT), along with successful case studies contributing to top-tier university development.

August 2024: 229x152: 240pp
Hb: 978-981-5129-19-9: **£116.00**
www.routledge.com/9789815129199



Maria Hester Park (1760–1813)

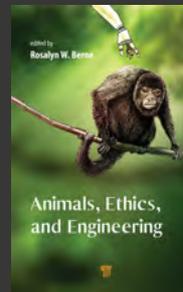
Composer, Teacher, and Performer

Lise Karin Meling

This book is an important contribution to the study of women in classical music, specifically focusing on the life and works of Maria Hester Park. The book delves deeply into Maria Hester Park's life and works, covering her performances, professional relationships, and influence within London's cultural milieu; an in-depth analysis of her keyboard compositions; exploration of her engagement with subscription publishing and its

implications for her reputation; and the societal context surrounding female accomplishments in music during her time.

October 2025: 229x152: 158pp: 14 illus, 14 line drawings
Hb: 978-981-5129-78-6: **£37.99**
www.routledge.com/9789815129786

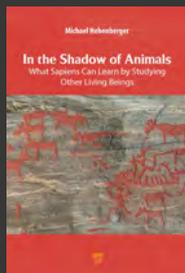


Animals, Ethics, and Engineering Intersections and Implications

Rosalyn W. Berne

Animals, Ethics, and Engineering: Intersections and Implications is a seminal work that explores the intricate relationship between technology, ethics, and the welfare of non-human animals. Edited by Rosalyn W. Berne, this volume brings together leading scholars and practitioners to examine the ethical responsibilities inherent in technological progress and its impact on animal well-being.

August 2025: 229x152: 528pp: 13 illus, 9 halftones, 4 line drawings
Hb: 978-981-5129-56-4: **£53.99**
www.routledge.com/9789815129564



In the Shadow of Animals

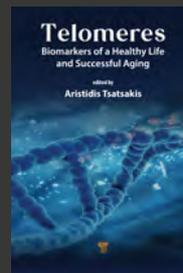
What Sapiens Can Learn by Studying Other Living Beings

Michael Hehenberger

This book explains how various animals have adapted to extreme conditions, and why humans need animals and should protect them. It helps to better understand "life on our planet" and the place of Homo sapiens among other living beings. It is a restructured version of the author's previous book *Our Animal Connection* and is more accessible for two reasons—streamlined and simplified text in all chapters and highly technical portions

moved to Appendices A and B.

October 2024: 229x152: 384pp: 112 illus
Hb: 978-981-5129-41-0: **£76.99**
www.routledge.com/9789815129410



Telomeres Biomarkers of a Healthy Life and Successful Aging

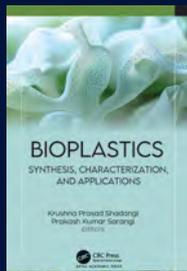
Edited by **Aristidis Tsatsakis**

This book provides a comprehensive overview of aging and its mechanisms through the prism of telomere length and its link to lifestyle parameters and environmental pollutants, diseases where telomere length attrition is prominent, and therapeutic approaches to slow down or prevent the process of telomere length reduction. It also provides an extensive comparison of

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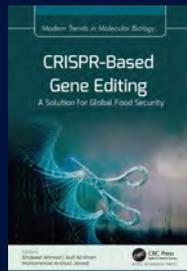
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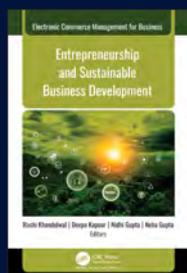
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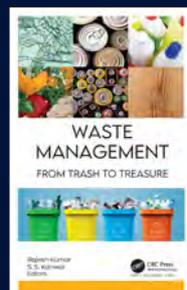
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