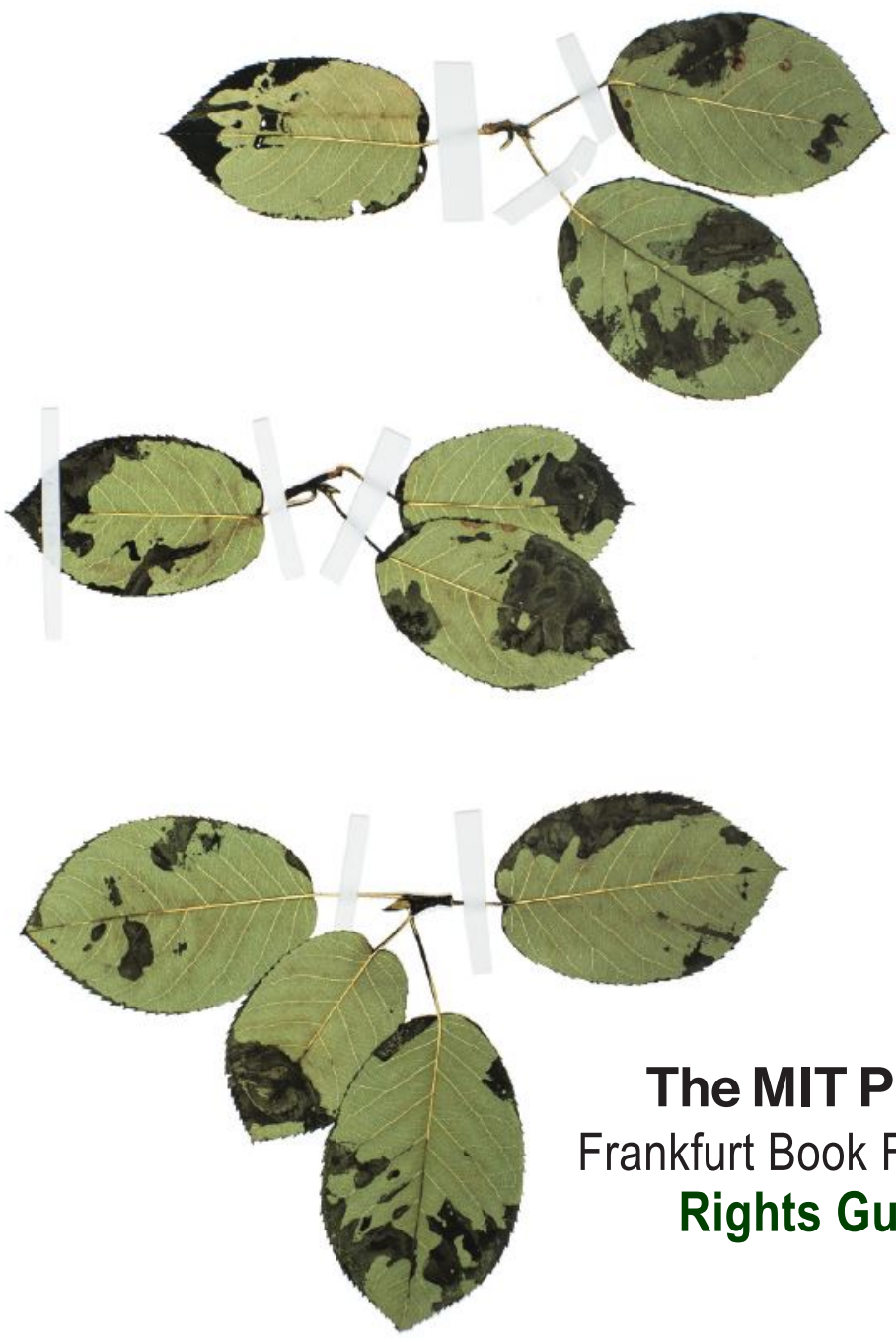

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Rights Guide

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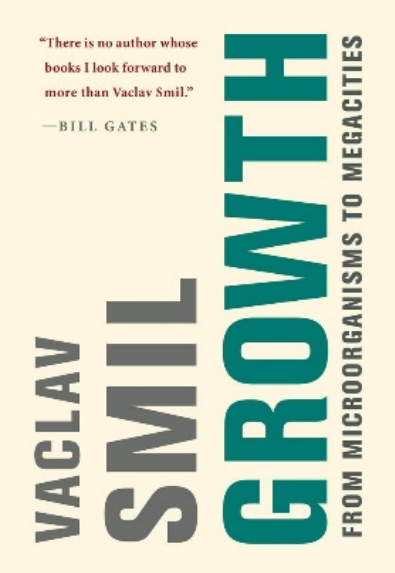

GROWTH

From Microorganisms to Megacities

Vaclav Smil (author of *Energy and Civilization: A History*)

536 pages; OCTOBER 2019

"Does for the history of energy what Thomas Piketty did for the history of inequality." — **Rutger Bregman**, author of *Utopia for Realists*

"Perhaps the world's foremost thinker on energy of all kinds." — ***Science***

A magisterial investigation of growth in nature and society, from tiny organisms to the trajectories of empires and civilizations by Bill Gates' favorite scientist and the bestselling author of *Energy and Civilization: A History*.

Growth has been both an unspoken and explicit aim of humankind's individual and collective striving since the time when we could first walk upright. It shapes the capabilities of our extraordinarily large brains and the fortunes of our economies and even governs the lives of microorganisms and galaxies. Growth is manifested in annual increments of continental crust, a rising gross domestic product, a child's growth chart, the spread of cancerous cells.

In this magisterial book, Vaclav Smil offers a systematic investigation of growth in nature and society, from tiny organisms to the trajectories of empires and civilizations. He takes readers on a journey from bacterial invasions and animal metabolisms to megacities and the ever-expanding global economy. He examines the growth of energy conversions and man-made objects that fuel and enable our economy —developments that have been essential to the *growth* of civilization. Finally, he looks at the complex systemic growth of human populations, its challenges and conquests—through cities, empires, civilizations—explaining that we can chart the steady growth of organisms across individual and evolutionary time, but that the often non-linear progress of societies and economies encompasses both decline and renewal.

"Monumental. . . . Smil is no catastrophist, but his conclusions—that infinite growth on a finite planet is impossible, and that much depends on curtailing or reversing certain trends—are no less chilling for their sobriety." — ***The New Yorker***

"According to Smil, growth, whether biological, social or economic, may be normal; but the exponential growth in economies and lifestyles we have seen in recent decades isn't, and can't continue without disastrous consequences." — ***New Scientist***

"If all of humanity consumed like Americans, we'd need the regenerative resources of another four or five planets. In destroying the ecosystem and marginalizing wild animals, he writes, the human species has become a race of "super predators." — ***Bloomberg***

"A tremendous work of synthesis." — ***The Enlightened Economist***

"There is no author whose books I look forward to more than Vaclav Smil." — **Bill Gates**

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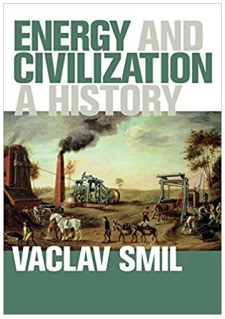
Also by Vaclav Smil:



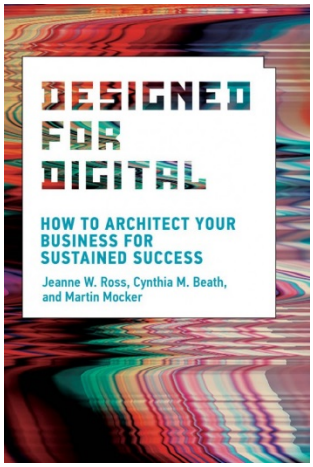
ENERGY AND CIVILIZATION: A History

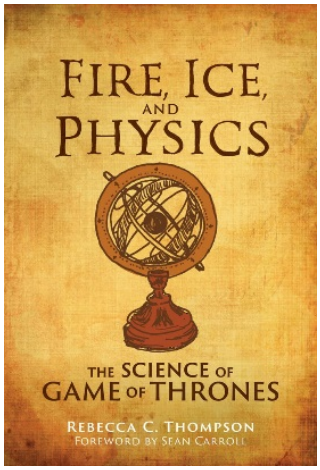
"In *Energy and Civilization*, Smil goes deep and broad to explain how innovations in humans' ability to turn energy into heat, light, and motion have been a driving force behind our cultural and economic progress over the past 10,000 years."
—Bill Gates, *Gates Notes*, Best Books of the Year

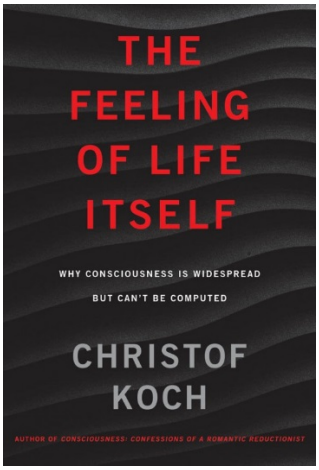
"A wise, compassionate, and valuable book." **—Foreign Affairs**

Licenses: China (Ginkgo), Japan (Seidosha). Korea (Samcheonlli), Finnish (Terra Cognita), Poland (PWN), Russia (EKSMO), Turkey (Bilgi University Press), UAE (Kalima Project) and Ukrainian (FLC).

The MIT Press







THE SCIENTIFIC ATTITUDE

Defending Science from Denial, Fraud, and Pseudoscience

Lee McIntyre

Licenses: Germany (Springer), Spain (Catedra).

An argument that what makes science distinctive is its emphasis on evidence and scientists' willingness to change theories on the basis of new evidence.

"In this age of fake news and alternative facts, this important book could not come at a more crucial time. " – **Michael Shermer, Skeptic Magazine**

"An important book for our post-truth culture." – **Michael Patrick Lynch**; author of *The Internet of Us*

DESIGNED FOR DIGITAL

How to Architect Your Business for Sustained Success

Jeanne Ross, Cynthia Beath, and Martin Mocker

Licenses: Japan (Nikkei).

Practical advice for redesigning "big, old" companies for digital success, with examples from Amazon, BNY Mellon, LEGO, Philips, USAA, and many other global organizations.

"Offer a contemporary digital model for enterprises. Those who can obtain it will have the 'right to win' and who cannot will increasingly find themselves subjected to wave after wave of digital disruption. Interestingly, the authors not only argue for the importance of architecture, but they also argue for a revised theory of management. This makes the book relevant to IT professionals and business leaders interested in digital transformation." — **CIO**

FIRE, ICE, AND PHYSICS

The Science of Game of Thrones

Rebecca C. Thompson

Licenses: Italian (Mondadori), German (Springer), Estonian (Argo).

A physicist – and super fan – shines some scientific light on George R. R. Martin's dark, fantastical world, from ice walls to the genetics of the Targaryens and Lannisters to the litany of GOT murder methods.

"An exciting and informative read for fans of the show who often asked: *How would that really work?* A must-read for new fans who will binge-watch the whole series in the future."— **Ars Technica**

THE FEELING OF LIFE ITSELF

Why Consciousness Is Widespread but Can't Be Computed

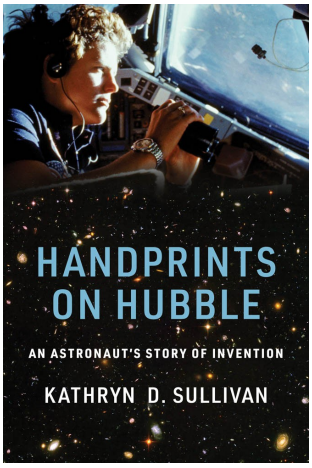
Christof Koch

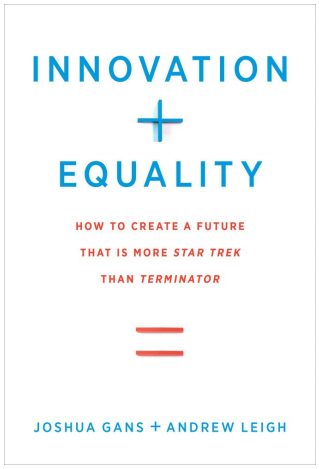
Licenses: No current licenses.

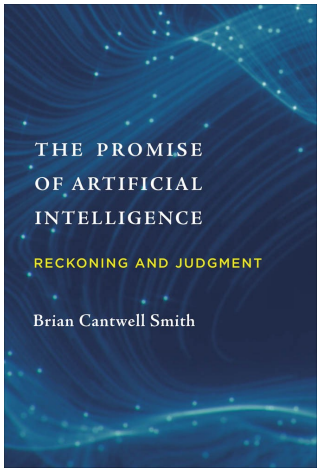
An argument that consciousness, more widespread than previously assumed, is the feeling of being alive, not a type of computation or a clever hack.

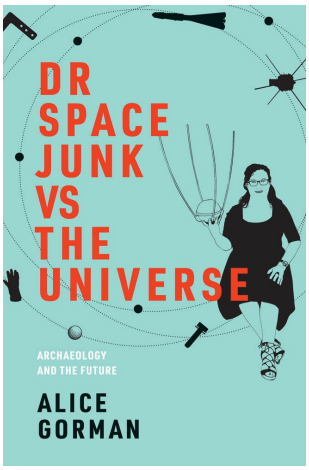
The president of the Allen Institute for Brain Science in Seattle, former professor for neuroscience at Cal Tech and author of the bestselling *Consciousness* explores how the brain is much more than a neural network of algorithms and seeks to define the elusive "consciousness." According to Koch: "It's my experience, it's my pain, my pleasure, my hopes, my aspirations, my fears… it's the feeling of life itself. All of that is consciousness."

The MIT Press









HANDPRINTS ON HUBBLE
An Astronaut's Story of Invention
Kathryn D. Sullivan

248 pages; NOVEMBER 2019

The Hubble Space Telescope has revolutionized our understanding of the universe. It has revealed thousands of galaxies in what seemed to be empty patches of sky; transformed our knowledge of black holes; found dwarf planets with moons orbiting other stars; and measured precisely how fast the universe is expanding. Sullivan, the first American woman to walk in space, recounts how she and a team of astronauts, engineers, and scientists launched, rescued, repaired, and maintained Hubble, the most productive observatory ever built. Along the way, she chronicles her early life as a “Sputnik Baby,” her path to NASA through oceanography, her initiation into the space program as one of “thirty-five new guys”, and a vivid description of what liftoff feels like inside a spacecraft, shows us the view from a spacewalk, and recounts the temporary grounding of the shuttle program after the Challenger disaster.

THE PROMISE OF ARTIFICIAL INTELLIGENCE
Reckoning and Judgment
Brian Cantwell Smith

192 pages; SEPTEMBER 2019

The MIT-trained, Stanford / Univ. of Toronto cognitive scientist argues that artificial intelligence is not yet close to developing systems that rival human intelligence. Smith examines the history of AI from its first-wave origins (“good old-fashioned AI,” or GOFAI) to such celebrated second-wave approaches as machine learning, paying particular attention to recent advances that have led to excitement, anxiety, and debate. He unpacks the notion of intelligence itself—what sort humans have, and what sort AI aims at through its powers of *reckoning*. Though powerful, reckoning cannot yet match human judgment—dispassionate, deliberative thought, grounded in ethical commitment and responsible action honed over millennia. Impressed by AI’s reckoning prowess, will we shift our expectations of human intelligence? Or will we use AI for reckoning tasks while we strengthen our commitment to judgment, ethics, and the world.

INNOVATION + EQUALITY
How to Create a Future That Is More Star Trek Than Terminator
Joshua Gans

288 pages; OCTOBER 2019

Is economic inequality the price we pay for innovation? Economist Joshua Gans and policy maker Andrew Leigh make the case that pursuing innovation does not mean giving up on equality—precisely the opposite. They outline ways that society can become both more entrepreneurial and more egalitarian. All innovation entails uncertainty; there’s no way to predict which new technologies will catch on. Therefore, Gans and Leigh argue, rather than betting on the future of particular professions, we should consider policies that embrace uncertainty and protect people from unfavorable outcomes. They suggest policies that promote both innovation and equality to embrace the techno-utopia of *Star Trek* rather than the dark dystopia of *Terminator*. **Licensed in Japan** (Business Kyoiky).

DR. SPACE JUNK VS. THE UNIVERSE
Archaeology and the Future
Alice Gorman

320 pages; OCTOBER 2019

NASA estimates there are now more than 500,000 bits of human-made debris the size of a marble or larger orbitting the Earth. Space archaeologist Alice Gorman - who goes by the *nom de blog* "Dr. Space Junk" - studies probes, modules, “satellites, rockets, fairings, bolts, flecks of paint, vented fuel, and even human waste" and the nearly 1,500 active satellites on which our interlinked, technology-addicted way of life depends. Erudite and playful, Gorman reveals that space is not as empty as we might think. and that by looking up and studying space artifacts, we can learn an awful lot about our own culture on earth.

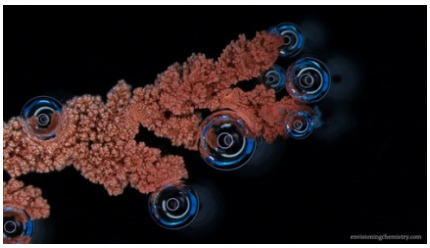
NEW & FORTHCOMING

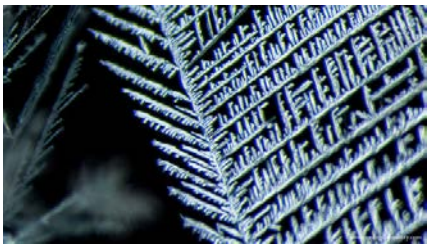
THE BEAUTY OF CHEMISTRY

Philip Ball, Yan Liang, and Wenting Zhu

300 pages; heavily illus.; FALL 2020

This glorious book combines evocative and illuminating text from award-winning science writer Philip Ball to highlight the imagery from the landmark online exhibition *Envisioning Chemistry* by Yan Liang, Wenting Zhu and the team behind the educational brand *Beauty of Science*. Combining a visual spectacular and Ball's words which bring chemistry alive for the reader, the book will challenge the common perception of chemistry as a mundane and messy science, showing instead it is filled with wonder. Through words and images the reader will discover how chemistry underpins the formation of snowflakes, the patterns of animal markings, the science of champagne, the colors of flowers, and much more. *The Beauty of Chemistry* is a book that will appeal equally to the practicing chemist (or scientist of any persuasion) and the curious lay reader.





Philip Ball's writing has been a finalist for the Samuel Johnson Prize for nonfiction and the National Book Critics Circle award. He has won the Aventis Science Books award (for *Critical Mass*), the American Chemical Society's James T. Grady-James H. Stack Award for Interpreting Chemistry for the Public, the British Society for the History of Science's Dingle Prize, and the Lagrange Prize.

Envisioning Chemistry was done in collaboration with the Chinese Chemical Society. Blending chemistry and art, the exhibition reveals the beauty of chemistry by using the techniques microphotography, time-lapse photography, and infrared thermal imaging to show chemical processes as they happen. The movies have been used in a variety of contexts, including displays and presentations at the opening ceremony of the International Year of the Periodic Table at UNESCO in January 2019.

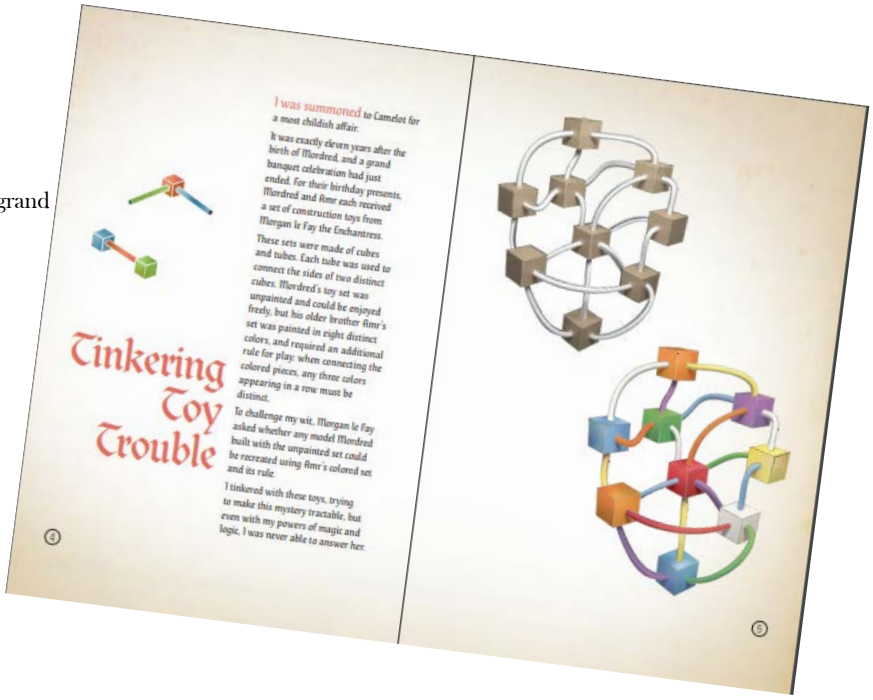
MAGE MERLIN'S UNSOLVED MATHEMATICAL MYSTERIES

Philip Ball, Yan Liang, and Wenting Zhu

140 pages; heavily illus.; FALL 2020

"I was summoned to Camelot for a most childish affair
It was exactly eleven years after the birth of Mordred, and a grand banquet celebration had just ended..."

So begins *Mage Merlin's Unsolved Mathematical Mysteries*, a fun, entertaining, and accessible entree into some of the enduring mysteries of mathematics. Told in the storyform spirit of Ian Stewart's *Flatterland* and Enzensberger's *The Number Devil*, this visually stunning illustrated YA book presents a handful of the most conceptually and curiously challenging, still unsolved problems of mathematics. Using a brief, colorful format, the author presents a Medieval mystery where only reason can help the reader and the journey is just as enjoyable (and compelling) as arriving at a solution.



World rights; all languages.

The MIT Press

Forthcoming Fall 2020:

THE CURIE SOCIETY

Heather Einhorn and Adam Staffaroni

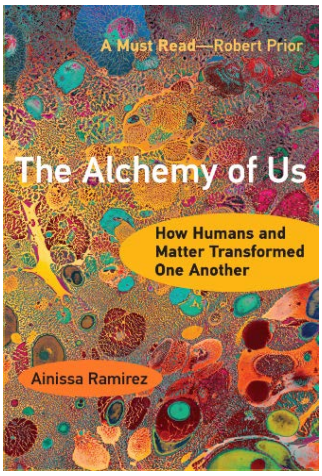
A Young Adult original graphic novel (OGN) about a secret society of young women chosen for their unique super powers of scientific reasoning.

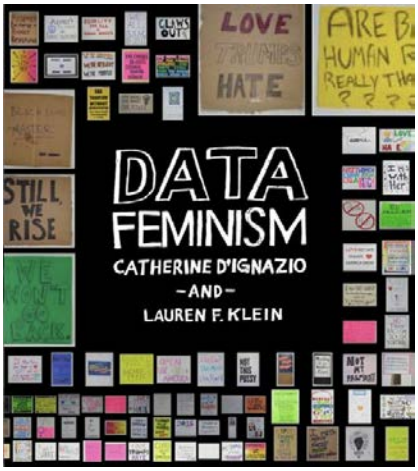
The fictional story of an international secret society started by Marie Curie indoctrinates young would-be female scientists who use their various STEM skills in covert operations to protect the world. The OGN was created by the creative team of Heather Einhorn and Adam Staffaroni of Einhorn's Epic Productions (EEP).

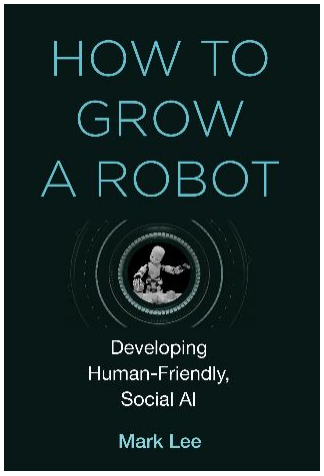
Scooter Braun (the manager of pop music acts like Kanye West, Justin Bieber and Ariana Grande) has purchased the television rights for the book for his SB Projects and will work with Einhorn and EEP to develop the completed graphic novel into a television series. EEP is MIT Press's partner in the development of the graphic novel itself. EEP has assembled a "real life Curie Society" through its relationship with Massive – a who's who of leading female scientists who have joined the organization's science advisory panel to help shape the scientific elements of the story and to ensure the best means of communicating to a science curious audience."

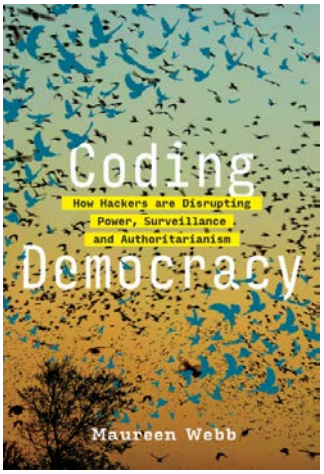
World rights; all languages.

The MIT Press









THE ALCHEMY OF US

How Humans and Matter Transformed One Another

Ainissa Ramirez — 336 pages; APRIL 2020

In the bestselling tradition of *Stuff Matters* and *A History of the World in Six Glasses*, a thoughtful scientific history of the impact of inventions on society. Scientist and educator Ramirez examines eight inventions—clocks, steel rails, copper communication cables, photographic film, light bulbs, hard disks, scientific labware, and silicon chips—offering an engaging look at how they shaped the human experience. She spotlights little-known inventors at the silences in history to allow readers to see themselves in their stories and, through storytelling, brings the wonder of science to an ever-widening audience. More than mere entertainment, coupled with action and social change, these inspiring stories have the potential to help society transcend its condition and favorably further this alchemy of us.

DATA FEMINISM

Catherine D'Ignazio (MIT) and Lauren F. Klein (Emory University) — 360 pages; MARCH 2020

Two young scholars uncover the startling truth of how *feminism* and *racism* apply to the field of data science. In examining the data, they prove the long-held suspicion that male hierarchical biases are implicit in the work of the male dominated programming world and that data science and artificial intelligence work to perpetuate the long-established structural inequalities. But they also reveal how data feminism can challenge power imbalances in our data-driven world and go on to address big data and AI's feminist future. As “Feminism” makes a comeback, the book explores how AI & data science can support the existing power structures—but also disrupt them.

HOW TO GROW A ROBOT

Developing Human-Friendly, Social AI

Mark Lee (Aberystwyth University, Wales) — 350 pages; MAY 2020

“Friendliness” doesn’t come to mind when we think of robots. They vacuum, deliver packages, dispose of bombs, even perform surgery—but they aren’t good conversationalists. For the future to promise more human-robot collaboration in both work and play, robots need to be less bot and more chat—and the current gains in AI, machine learning and deep learning alone will not yet get us there. A roboticist explores how they could become more human-like, introducing us to the core ideas in *developmental robotics*, and how this new approach based on developmental psychology can "grow" robots through their own experience rather than through design. A clear, accessible examination of the coming age of robots encouraging the general reader to build their own informed assessment of these technologies.

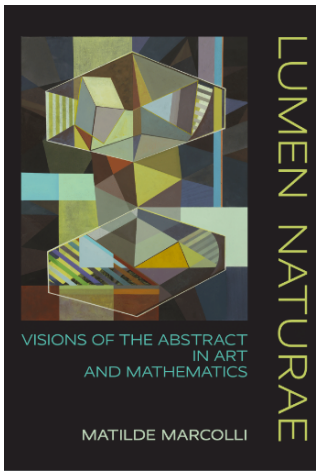
CODING DEMOCRACY

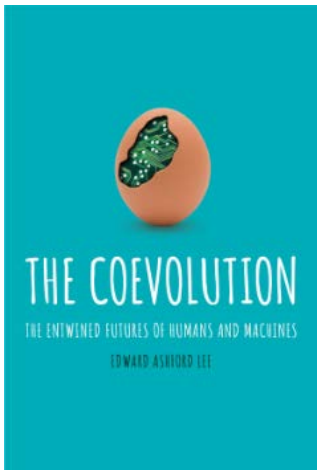
How Hackers Are Disrupting Power, Surveillance, and Authoritarianism

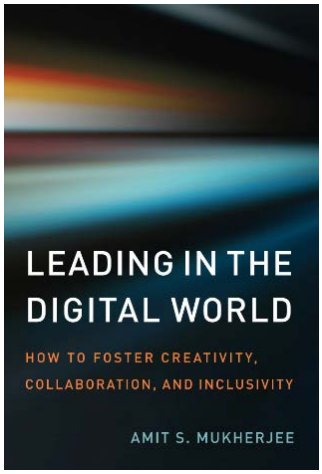
Maureen Webb — 288 pages; APRIL 2020

Hackers have become vital disruptors, inspiring a new wave of activism where ordinary citizens displace tech monoliths like Facebook and Amazon; enable worker cooperatives to kill platforms like Uber; give people control over their data; and provide engaged citizens a real say in governance and a capacity to reach consensus. Drawing on interviews with hackers, lawyers, activists, and other actors from around the globe to explore the ways in which code and “hacking” are shaping our democracies and our futures, Webb argues hacking has the potential to extend democracy and disrupt the mass surveillance, consolidation of power, and authoritarianism that technology has enabled. Not another optimistic declaration of tech utopianism, but an urgent upgrade of democracy in the digital era.

The MIT Press







LUMEN NATURAE

Visions of the Abstract in Art and Mathematics

Matilde Marcolli (University of Toronto, Caltech, and the Perimeter Institute in Canada) 400 pages; 237 color illus.; MARCH 2020

This beautifully illustrated book is about how space, time, randomness, entropy, and other mathematical and physics concepts have been expressed in contemporary, abstract art. It discusses such abstract notions (as well as the geometry of numbers, the shape of the cosmos, etc.) and how each were envisioned in both scientific developments and art. The title summarizes this and eludes to the concept from the history of *alchemy* which describes an enlightened state produced not from supernatural, divine intervention, but from an investigation of nature and the contemplation of the beauty of the abstract. Marcolli, a mathematical physicist, is the recipient of the prestigious Sofia Kovalevskaya Award given by Germany's Alexander von Humboldt Foundation to pursue research at the confluence of science and art.

THE COEVOLUTION

The Entwined Futures of Humans and Machines

Edward Ashford Lee (author of *Plato & the Nerd*; University of California, Berkeley) 376 pages; APRIL 2020

While humans invent and build machines, as inventors we evolve in parallel with the creation. The author of *Plato & the Nerd* addresses much of the current literature on the impact of digital technology on humans and society, challenging beliefs widely held among technologists today: that cognition is computing; that only humans design machines; that we are destined to be eclipsed by the machines. He confronts the deep questions in the theory of mind and argues that the confused assumption that we humans, as cognitive beings, are destined to be eclipsed by our creations is a scientifically indefensible belief. Extensively researched, yet highly readable and entertaining, the book argues that humanity is rapidly coevolving with technology and that we will change as much we change it.

LEADING IN THE DIGITAL WORLD

How to Foster Creativity, Collaboration, and Inclusivity

Amit S. Mukherjee (author, *The Spider's Strategy*; Harvard Business School) 168 pages; MARCH 2020

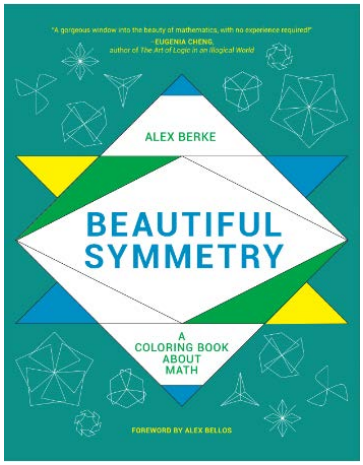
Twentieth century business emphasized productivity—how to make more widgets more efficiently. Rather than productivity, firms in the digital era need to focus on creativity. As the nature and goals of work evolves, so too do the requisite skills of leadership. The hierarchical organization is gone as technology radically restructures organizations into flatter, more collaborative environments, drawing workers from around the world. Mukherjee provides the definitive book on preparing this new leadership emphasizing creativity, collaboration, and inclusivity. Included is a unique Global Survey of over 700 leaders—with respondents from the Americas, Europe, China, Japan, Southeast Asia, Australia, India, the Middle East and Africa to gauge how they are managing with changes wrought by the digital era.

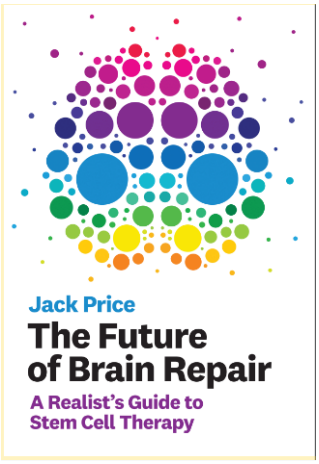
THE WORLD AS AN ARCHITECTURAL PROJECT

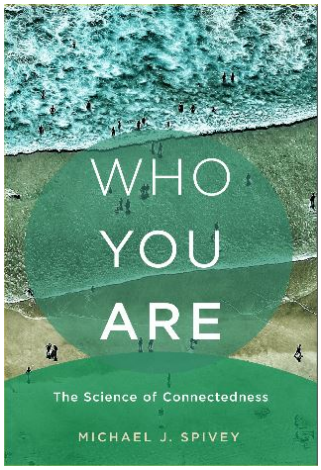
Hashim Sarkis, Roi Salgueiro Barrio, and Gabriel Kozlowski 576 pages; 230 color illus., 50 line drawings; MAY 2020

The world's growing vulnerability to planet-sized risks invites action on a global scale. *The World as an Architectural Project* explores how for over a century architects have imagined the future of the planet through world-scale projects. With fifty speculative projects by such celebrated architects as Buckminster Fuller, Le Corbusier, Archigram, Paolo Soleri, Rem Koolhaus, Zaha Hadid, and many others, documented in text and images, this ambitious and wide-ranging book is the first compilation of its kind. Interestingly, architects began to address the world as a project long before the advent of contemporary globalism and its assorted anxieties.

The MIT Press







BICYCLING SCIENCE – 4th Edition

David Gordon Wilson and Theodor Schmidt — 500 pages; APRIL 2020

The cycling bible in an updated and revised edition. This essential book covers cycling history, its development, racing, and the mechanical engineering of two wheels with new material on aerodynamics, braking, drag, steering, stability, human physiology, cycling achievements, special human-powered machines for use on land. Wilson, Englishman, forty year MIT professor of mechanical engineering, and founder of the modern recumbent bicycle movement spent the last thirty years beloved and respected by the global cycling community. He died in May 2019 just after completing the book, leaving a lasting legacy of advancing the cause of the bicycle and cyclists alike.

BEAUTIFUL SYMMETRY

A Coloring Book about Math

Alex Berke — 160 pages; MARCH 2020

Beautiful Symmetry is a coloring book about math, inviting us to engage with mathematical concepts visually through coloring challenges and visual puzzles. We can explore symmetry and the beauty of mathematics playfully, coloring through ideas usually reserved for advanced courses. The book is for children and adults, for math nerds and math avoiders, for educators, students, and coloring enthusiasts. Combining the playful and the pedagogical, *Beautiful Symmetry* offers both relaxing entertainment for recreational colorers and a resource for math-curious readers, students, and educators.

THE FUTURE OF BRAIN REPAIR

A Realist's Guide to Stem Cell Therapy

Jack Price — 240 pages; MARCH 2020

The human brain is the most complex structure in the known universe—yet our understanding of it is limited and repairing brain tissue remains the ultimate biomedical challenge. Yet the major diseases of the aging brain—Stroke, Parkinson's, Alzheimer's—may soon be treatable with stem cell therapies and the first licensed stem cell therapies for brain disorders are about to gain regulatory approval. Will they really make a difference, will they fail, or will they soon be superseded by a new generation of superior therapies? Price provides an overview of the state of cell replacement technology as it relates to the brain, offering the context in which to set realistic expectations for therapies that may emerge from stem cell science. He notes that patients, doctors, ethicists, regulators, and the public at large need to weigh the therapeutic promise of stem cell therapies against the limitations and continue to diagnosis failures and learn for the future.

WHO YOU ARE

The Science of Connectedness

Michael J. Spivey, Professor of Cognitive Science (University of California) — 384 pages; MAY 2020

Who are you? A brain? A body? Something much deeper, an inner sanctuary that contains our true selves? Or is the opposite true, your true self more outward-facing? We've all felt at times that something outside ourselves is a part of us—a child, a place, a favorite book or song. Spivey confirms this intuition through science, expanding chapter-by-chapter an outward definition of the self. He draws on cognitive and neuroscience, the back-and-forthing in the regions of the brain, the interaction between the brain and body. He makes the case for understanding objects in our environment as additional parts of who we are. Finally, he shows that, just as interaction links brain, body, and environment, ever-expanding systems of interaction link humans to other humans, to nonhuman animals, and to nonliving matter.

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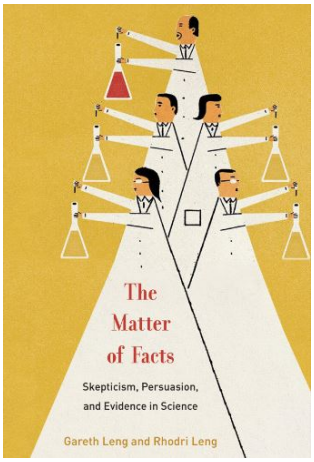

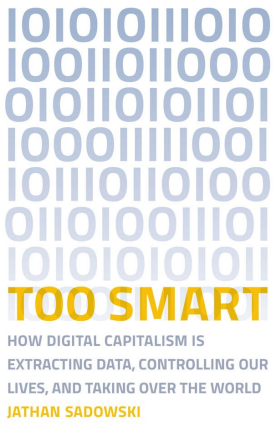

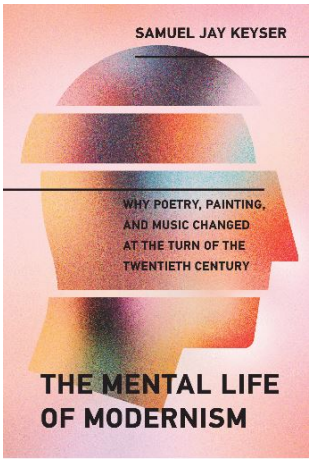

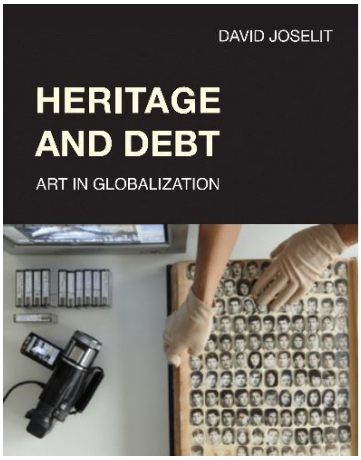

THE MATTER OF FACTS

Skepticism, Persuasion, and Evidence in Science

Gareth Leng (University of Edinburgh) and Rhodri Leng (University of Edinburgh) 200 pages; APRIL 2020

Modern science faces a series of threats that undermine faith in the reliability of scientific work. To solve these problems, we must reflect on what makes science work and what leads it astray. Written by a scientist and sociologist, this books provides a perspective on what makes science work and what leads it astray. The aim of the book is to raise awareness of the many problems facing science and to provoke a re-examination of widely-held assumptions about what science is. The issues raised in this book have implications for how science is practiced and managed, but also for how sociologists and philosophers study science.

TOO SMART

How Digital Capitalism is Extracting Data, Controlling Our Lives, and Taking Over the World

Jathan Sadowski (University of Sydney) MAY 2020

Digital capitalism insists that emerging "smart" technologies allow us to live more convenient, connected, efficient, or informed lives. This book addresses the ways in which these technologies do not necessarily benefit society and in fact have the potential to cause harm; this is the threshold where "smart" becomes "too smart." A pointed analysis of who wins and who loses in a world of connected, data-gathering devices, this book explores how smart technology is designed to advance the values and goals of digital capitalism. Sadowski, a globally recognized expert on smart technology and smart urbanism, offers a big picture analysis of the scope of control of smart technologies while diving deep into individual examples and argues that smart technology serves a larger politico-economic regime.

THE MENTAL LIFE OF MODERNISM

Why Poetry, Painting, and Music Changed at the Turn of the Twentieth Century

Samuel Jay Keyser (MIT) 207 pages; 47 b&w illus., FEBRUARY 2020

Keyser, Professor Emeritus in MIT's Department of Linguistics and Philosophy, outlines the "outer limits of aesthetics" and proposes an alternative origin to the rise of modernity: an encounter with the limitations of the brain's "natural aesthetic" that forced the avant-garde in search of "non-natural" aesthetics, from atonal music, free verse, and a dada approach to classical rule systems. According to Keyser, this shift was every bit as noteworthy and dramatic as that of the shift into science in the 17th century. Filled with entertaining examples and analyses"— from "Silence of the Lambs" to the poetry of Wallace Stevens"— Keyser offers a series of "treasure hunts": digging up the buried modii operandi in modernist works like code. Call it "Chomsky meets Dada… it is up to the reader to decide who wins.

HERITAGE AND DEBT

Art in Globalization

David Joselit (CUNY Graduate Center) 312 pages; 82 illus.; MARCH 2020

Modernism claimed to live in the future and relegated the rest of the world to the past. Global contemporary art shatters this myth by reactivating various forms of heritage—from literati ink painting in China to Aboriginal painting in Australia—in order to propose new and different futures. Joselit, CUNY's Distinguished Professor in Art History, traces three distinct forms of modernism that developed outside the West, in opposition to Euro-American modernism: postcolonial, socialist realism, and the underground. He argues that these modern genealogies are synchronized with one another and with Western modernism to produce global contemporary art.

SLEIGHT OF MIND

75 Ingenious Paradoxes in Mathematics, Physics, and Philosophy

Matt Cook — 368 pages; 79 illus.; MARCH 2020

A bestselling fiction author, magician and economist explores 75 paradoxes in mathematics, philosophy, the social sciences, and physics. As each paradox is discussed and resolved, the book will help you discover the meaning of knowledge and the proper formation of concepts—and how reason can dispel the illusion of contradiction. The title—"Sleight of Mind"—refers to how a paradox is like a magic trick on our brain, but really it's just a trick, not reality. We travel from ancient Greece to cutting-edge physics laboratories; encountering contributions from Caltech physicists and a Grant Sanderson, creator of 3blue1brown, the most popular math-based YouTube channel, taking a deep dive into 75 paradoxes in mathematics, philosophy, the social sciences, and physics.

A TALE OF TWO TOWERS

Gigantism in Architecture and Digital Culture

Henriette Steiner and Kristin Veel — 248 pages; 62 illus.; MAY 2020

A book about towers, monumental architecture, what each symbolize, and the data apparatus so essential to our 21st century lives. It is a book about the Eiffel Tower (1889); the Twin Towers (1970/1) now gone; and the *new* One World Trade Tower that now stands onsite. And it is a tale of two cities, Paris and New York, haunted by recent terror attacks, and the relationship between, on the one hand, prodigious architecture imbued with symbolism, and on the other hand, the digital communication invisibly transmitting from the towers. Moving from the birth of the Eiffel Tower to the present, the book is a rumination on the cultural significance of these towering creations.

ACHIEVEMENT RELOCKED

Loss Aversion and Game Design

Geoffrey Engelstein — 144 pages; FEBRUARY 2020

An MIT-trained physicist, a noted podcaster, and award-winning table-top game designer of such as titles include Space Cadets, The Fog of War, Pit Crew, and The Expanse examines loss aversion and gaming. The psychology of loss aversion is that that losses make people feel worse than gains make them feel better—i.e. we feel twice as bad when we lose $100 as we feel good when we win the same amount. *Loss aversion* is really the basis of game design. *Achievement Relocked* explores framing, regret, competence, and other effects, and their relation to players' relationship with the game experience. The book offers a wide lens through which to view many design choices. The title is a play on the gaming expression "Achievement Unlocked", where a player earns a reward.

#HASHTAG ACTIVISM

Networks of Race and Gender Justice

Sarah J. Jackson, Moya Bailey, and Brooke Foucault Welles — 264 pages; FEBRUARY 2020

The beginning of the 21st century brought forth a number of social media platforms that have allowed activists to increase their audience exponentially and with relative ease. From hashtags such as #BlackLivesMatter, #MeToo to the Arab Spring and the Occupy movements, digital social activism mobilized people like never before. Using an innovative interdisciplinary research approach that combines big data analytics with critical/cultural analysis, the authors examine how and why Twitter hashtags have become an important platform for historically disenfranchised populations to advance counter narratives and advocate for social change. Given shifting understandings about the role of social media in 21st century democracy, and considering recent high-profile public debates about racial violence, feminist inclusivity, and sexual identity, the book shows how to study political identity within the digital space of counterpublic activism and dissent.

CAN MARKETS SOLVE PROBLEMS?

An Empirical Inquiry into Neoliberalism in Action

Daniel Neyland, Véra Ehrenstein, and Sveta Milyaeva — 336 pages; NOVEMBER 2019

Market-based interventions have been used to solve public problems from education to healthcare, climate change to privacy. But the authors argue there is no single entity knowable as "the market." Instead, they detail the devices, relations, and practices that underpin market-based interventions. Each chapter focuses on a different intervention and explores the market sensibility around which it is organized—trade & exchange, competition, property & ownership, investment & return—each become the focus of what it means to intervene in public problems and how solutions are continually reworked. The first serious STS enquiry into markets and public problems and a provocative analysis of market-based interventions into public problems and the consequences.

TECHNOLOGIES OF THE HUMAN CORPSE

John Troyer (Director, Centre for Death and Society at the University of Bath) — 240 pages; MARCH 2020

The book explores the interaction of the dead with technology throughout modern history—how human technological interventions into death and the corpse since the nineteenth century have had a profound impact on today's (and future) human end-of-life realities. Far from a cold look at cold cases, this son of a funeral director has a personal connection to the topic—the untimely 2018 death of his sister from brain cancer. He allows this personal tragedy to inform his study of living and dying, offering a pathos beyond mere scholarship.

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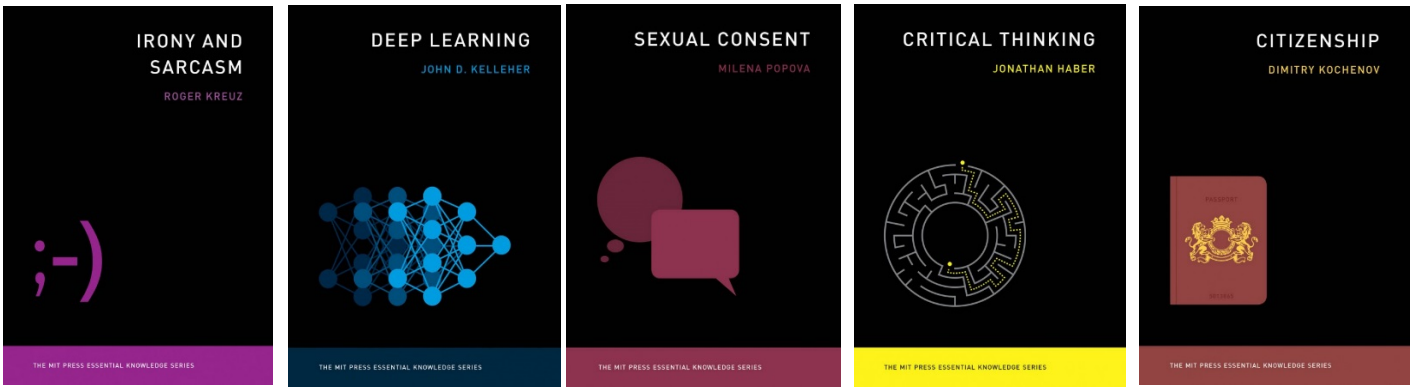

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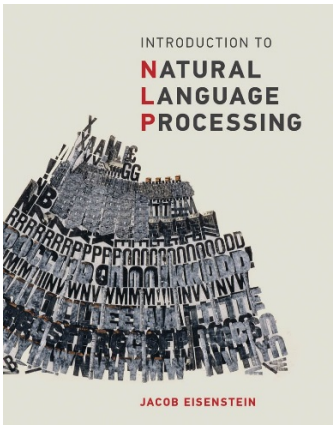

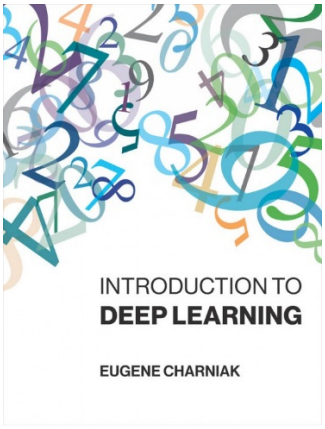

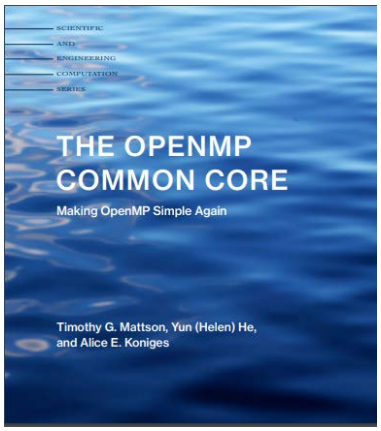

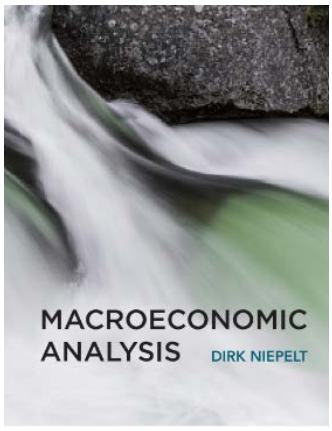

INTRODUCTION TO NATURAL LEARNING PROCESSING

Jacob Eisenstein — 536 pages; OCTOBER 2019

A survey of computational methods for understanding, generating, and manipulating human language, which offers a synthesis of classical representations and algorithms with contemporary machine learning techniques.

“An excellent introduction to natural language processing, with emphasis on foundational methods and algorithms. Highly recommended to every serious researcher and student in natural language processing.”— **Hwee Tou Ng**, (**National University of Singapore)**.

“Natural language processing is a critically important and rapidly developing area of computer science. An essential guide through the core technical methodologies of the field and their application in challenging real-world problems. A wonderful textbook.” — **Alexander Rush (Cornell University)**

THE OPEN MP COMMON CORE

Timothy G. Mattson, Alice E. Koniges, and Helen He — 320 pages; NOVEMBER 2019

Guides the reader through the most essential elements of OpenMP—the twenty-one components that most OpenMP programmers use most of the time, known collectively as the “OpenMP Common Core.” Once they have mastered these components, readers with no prior experience writing parallel code will be effective parallel programmers, ready to take on more complex aspects of OpenMP. After introducing the fundamental concepts of parallel computing and history of OpenMP's development, the book covers topics including the core design pattern of parallel computing, the parallel and worksharing-loop constructs, the OpenMP data environment, and tasks.

INTRODUCTION TO DEEP LEARNING

Eugene Charniak (Brown University) — 192 pages; JANUARY 2019

A concise, project-driven guide to deep learning takes readers through a series of program-writing tasks that introduce them to the use of deep learning in such areas of artificial intelligence as computer vision, natural-language processing, and reinforcement learning.

“We have a choice of a variety of books on deep learning: books on the theory written by expert academics, and practical books written by programmers. This book gives you the best of both… In this masterfully executed book he shows you what he has come to understand, allowing you to follow the code step by step, and also learn from his informed conclusions.” — **Peter Norvig, Research Director, Google**

MACROECONOMIC ANALYSIS

Dirk Niepelt (University of Bern) — 320 pages; JANUARY 2020

A concise yet thorough introduction to modern macroeconomic theory, covering all major areas in mainstream macroeconomics today and showing how macroeconomic models build on and relate to each other. The self-contained text begins with models of individual decision makers, proceeds to models of general equilibrium with and without friction, and, finally, presents positive and normative theories of government and economic policy.

“The rare textbook, both comprehensive and rigorous, as well as concise and simple.” — **Ricardo Reis, London School of Economics**

INTRODUCTION TO MACHINE LEARNING - **Fourth Edition**

Ethem Alpaydin 700 pages; JANUARY 2020

Machine learning is the branch of artificial intelligence a method of data analysis that automates analytical model building based on the idea that systems can learn from data, identify patterns, and make decisions with minimal human intervention. The first edition of this pioneering work in the field was published in 2004. For the new edition, the author has added a new chapter on deep learning including training deep neural networks as well as sections on generative adversarial networks and the policy gradient method and extended the chapter on reinforcement learning to discuss the use of deep networks. He has revised chapters reflecting new approaches and includes two new appendices on linear algebra and optimization have also been added.

REINFORCEMENT LEARNING – **Second Edition**

An Introduction

Richard S. Sutton and Andrew G. Barto. 552 pages; November 2018

"The bible of reinforcement learning, and the new edition is particularly timely given the burgeoning activity in the field. No one with an interest in the problem of learning to act - student, researcher, practitioner, or curious non-specialist - should be without it." –**Pedro Domingos**, Author of *The Master Algorithm*, Professor of Computer Science.

"The second edition of Reinforcement Learning by Sutton and Barto comes at just the right time. The appetite for reinforcement learning among machine learning researchers has never been stronger. If you want to fully understand the fundamentals of learning agents, this is the textbook to go to and get started with." –**Yoshua Bengio**, **Author of *Deep Learning***, University of Montreal.

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PROBABILISTIC MACHINE LEARNING FOR CIVIL ENGINEERS

James A. Goulet (Polytechnique Montreal) 367 pages; APRIL 2020

This textbook introduces probabilistic machine learning concepts in a way that is understandable and relevant for civil engineers who typically do not have the background necessary to understand specialized books from the field of computer science. It presents key approaches among the three sub-fields of machine learning—supervised-, unsupervised-, and reinforcement learning— presenting each through step-by-step examples and illustrations to simplify abstract concepts. Applications include determining the integrity of bridges and structures, monitoring the health of soils and waterways, and predicting traffic patterns.

AI & HUMANITY

Illah Reza Nourbakhsh (The Robotics Institute, Carnegie Mellon University) 160 pages; FEBRUARY 2020

Artificial Intelligence is profoundly changing our world. *AI & Humanity* offers an authentically cross-disciplinary, and this is necessarily the right way to equip all students and citizens today to make sense of how AI is changing the world, and how they each, individually, have a role in ensuring that we bend the future in the best possible direction, in an age of rapidly advancing computational technologies. AI & Humanity will help readers connect the history of agency, dignity and power to the most modern technical advances of AI, providing the structure that empowers readers to understand AI and understand its impact on humanity today and in the future.

URBAN HUMANITIES

New Practices for Reimagining the City

Dana Cuff, Anastasia Loukaitou-Sideris, Todd Presner, Maite Zubiaurre, Jonathan Jae-an Crisman 300 pages; FEBRUARY 2020

The definitive introduction to the emerging field of *urban humanities* **–** which sits at the nexus of the humanities, design, and urban studies. The authors maintain that urban studies, planning, and architecture have fallen short and in order to foster more resilient and just cities, actively imagining and collaboratively creating a good future for cities and spatial justice is essential. Featured projects from the authors' own research include the megacities: Tokyo, Shanghai, Mexico City, and Los Angeles.

AN INTRODUCTION TO STATISTICAL GENETIC DATA ANALYSIS

Melinda C. Mills, Nicola Barban, and Felix Tropf 432 pages; FEBRUARY 2020

The first textbook to provide a comprehensive introduction to all aspects of applied statistical genetic data analysis, from the biology of human genetics and evolution to statistical foundations to applied computer data analysis, covering the skills currently demanded of students and researchers in the wide variety of fields that are using genetic data. It offers quantitative tools for the analysis of large amounts of genetic data and their application in the social sciences.

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