
The Science Of Computers

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Turing's Vision
Computers Ltd
Making Music with Computers
Science in the Age of Computer Simulation

TRUJILLO CASSIDY

The Science of Computer Benchmarking MIT Press

This book provides an introduction to computer benchmarking. Hockney includes material concerned with the definition of performance parameters and metrics and defines a set of suitable metrics with which to measure performance and units with which to express them. He also presents new ideas resulting from the application of dimensional analysis to the field of computer benchmarking. This results in the definition of a dimensionless universal scaling diagram that completely describes the scaling properties of a class of computer benchmarks on a single diagram, for all problem sizes and all computers describable by a defined set of hardware parameters.

How Computers Really Work Taylor & Francis

Before Palm Pilots and iPods, PCs and laptops, the term "computer" referred to the people who did scientific calculations by hand. These workers were neither calculating geniuses nor idiot savants but knowledgeable people who, in other circumstances, might have become scientists in their own right. When *Computers Were Human* represents the first in-depth account of this little-known, 200-year epoch in the history of science and technology. Beginning with the story of his own grandmother, who was trained as a human computer, David Alan Grier provides a poignant introduction to the wider world of women and men who did the hard computational labor of science. His grandmother's casual remark, "I wish I'd used my calculus," hinted at a career deferred and an education forgotten, a secret life unappreciated; like many highly educated women of her generation, she studied to become a human computer because nothing else would offer her a place in the scientific world. The book begins with the return of Halley's comet in 1758 and the effort of three French astronomers to compute its orbit. It ends four cycles later, with a UNIVAC electronic computer projecting the 1986 orbit. In between, Grier tells us about the surveyors of the French Revolution, describes the calculating machines of Charles Babbage, and guides the reader through the Great

Depression to marvel at the giant computing room of the Works Progress Administration. When *Computers Were Human* is the sad but lyrical story of workers who gladly did the hard labor of research calculation in the hope that they might be part of the scientific community. In the end, they were rewarded by a new electronic machine that took the place and the name of those who were, once, the computers.

Computers and Thought Macmillan

Computers and Society explores the history and impact of modern technology on everyday human life, considering its benefits, drawbacks, and repercussions. Particular attention is paid to new developments in artificial intelligence and machine learning, and the issues that have arisen from our complex relationship with AI.

Law for Computer Scientists and Other Folk Time Life Medical

A guide to understanding the inner workings and outer limits of technology and why we should never assume that computers always get it right. In *Artificial Unintelligence*, Meredith Broussard argues that our collective enthusiasm for applying computer technology to every aspect of life has resulted in a tremendous amount of poorly designed systems. We are so eager to do everything digitally—hiring, driving, paying bills, even choosing romantic partners—that we have stopped demanding that our technology actually work. Broussard, a software developer and journalist, reminds us that there are fundamental limits to what we can (and should) do with technology. With this book, she offers a guide to understanding the inner workings and outer limits of technology—and issues a warning that we should never assume that computers always get things right. Making a case against technochauvinism—the belief that technology is always the solution—Broussard argues that it's just not true that social problems would inevitably retreat before a digitally enabled Utopia. To prove her point, she undertakes a series of adventures in computer programming. She goes for an alarming ride in a driverless car, concluding "the cyborg future is not coming any time soon"; uses artificial intelligence to investigate why students can't pass standardized tests; deploys machine learning to predict

which passengers survived the Titanic disaster; and attempts to repair the U.S. campaign finance system by building AI software. If we understand the limits of what we can do with technology, Broussard tells us, we can make better choices about what we should do with it to make the world better for everyone.

Seeing the Past with Computers University of Michigan Press

This interdisciplinary volume introduces new theories and ideas on creativity from the perspectives of science and art. Featuring contributions from leading researchers, theorists and artists working in artificial intelligence, generative art, creative computing, music composition, and cybernetics, the book examines the relationship between computation and creativity from both analytic and practical perspectives. Each contributor describes innovative new ways creativity can be understood through, and inspired by, computers. The book tackles critical philosophical questions and discusses the major issues raised by computational creativity, including: whether a computer can exhibit creativity independently of its creator; what kinds of creativity are possible in light of our knowledge from computational simulation, artificial intelligence, evolutionary theory and information theory; and whether we can begin to automate the evaluation of aesthetics and creativity in silico. These important, often controversial questions are contextualised by current thinking in computational creative arts practice. Leading artistic practitioners discuss their approaches to working creatively with computational systems in a diverse array of media, including music, sound art, visual art, and interactivity. The volume also includes a comprehensive review of computational aesthetic evaluation and judgement research, alongside discussion and insights from pioneering artists working with computation as a creative medium over the last fifty years. A distinguishing feature of this volume is that it explains and grounds new theoretical ideas on creativity through practical applications and creative practice. *Computers and Creativity* will appeal to theorists, researchers in artificial intelligence, generative and evolutionary computing, practicing artists and musicians, students and any reader generally interested in understanding how computers can impact upon creativity. It

bridges concepts from computer science, psychology, neuroscience, visual art, music and philosophy in an accessible way, illustrating how computers are fundamentally changing what we can imagine and create, and how we might shape the creativity of the future. Computers and Creativity will appeal to theorists, researchers in artificial intelligence, generative and evolutionary computing, practicing artists and musicians, students and any reader generally interested in understanding how computers can impact upon creativity. It bridges concepts from computer science, psychology, neuroscience, visual art, music and philosophy in an accessible way, illustrating how computers are fundamentally changing what we can imagine and create, and how we might shape the creativity of the future.

When Computers Were Human MIT Press

The Physics of Computing gives a foundational view of the physical principles underlying computers. Performance, power, thermal behavior, and reliability are all harder and harder to achieve as transistors shrink to nanometer scales. This book describes the physics of computing at all levels of abstraction from single gates to complete computer systems. It can be used as a course for juniors or seniors in computer engineering and electrical engineering, and can also be used to teach students in other scientific disciplines important concepts in computing. For electrical engineering, the book provides the fundamentals of computing that link core concepts to computing. For computer science, it provides foundations of key challenges such as power consumption, performance, and thermal. The book can also be used as a technical reference by professionals. - Links fundamental physics to the key challenges in computer design, including memory wall, power wall, reliability - Provides all of the background necessary to understand the physical underpinnings of key computing concepts - Covers all the major physical phenomena in computing from transistors to systems, including logic, interconnect, memory, clocking, I/O

Structure and Interpretation of Computer Programs

Microsoft Press

"Come along on a science adventure to discover how computers do math so quickly, how we can communicate with computers, and so much more! This fun question and answer book has everything from facts and figures to simple diagrams and hilarious illustrations to help you learn introductory computer

science terms and concepts, including programming languages, variables, inputs, outputs, loops, and more."--Provided by publisher.

The History of the Computer Princeton University Press

This book introduces law to computer scientists and other folk. Computer scientists develop, protect, and maintain computing systems in the broad sense of that term, whether hardware (a smartphone, a driverless car, a smart energy meter, a laptop, or a server), software (a program, an application programming interface or API, a module, code), or data (captured via cookies, sensors, APIs, or manual input). Computer scientists may be focused on security (e.g. cryptography), or on embedded systems (e.g. the Internet of Things), or on data science (e.g. machine learning). They may be closer to mathematicians or to electrical or electronic engineers, or they may work on the cusp of hardware and software, mathematical proofs and empirical testing. This book conveys the internal logic of legal practice, offering a hands-on introduction to the relevant domains of law, while firmly grounded in legal theory. It bridges the gap between two scientific practices, by presenting a coherent picture of the grammar and vocabulary of law and the rule of law, geared to those with no wish to become lawyers but nevertheless required to consider the salience of legal rights and obligations. Simultaneously, this book will help lawyers to review their own trade. It is a volume on law in an onlife world, presenting a grounded argument of what law does (speech act theory), how it emerged in the context of printed text (philosophy of technology), and how it confronts its new, data-driven environment. Book jacket.

Quantum Computing for Computer Scientists MIT Press

"Digital computer simulation helps study phenomena of great complexity, but how much do we know about the limits and possibilities of this new scientific practice? How do simulations compare to traditional experiments? And are they reliable? Scrutinizing these issues with a philosophical lens, Eric Winsberg explores the impact of simulation on such issues as the nature of scientific evidence, the role of values in science, the nature and role of fictions in science, and the relationship between simulation and experiment, theories and data, and theories at different levels of description"--Cover.

But how Do it Know? How Do

Beginning with an explanation of why considerable outlays for computing since 1973 have not resulted in comparable payoffs, the author proposes that emerging techniques for user-centred development can turn the situation around - through task analysis, ite

Computer Images SIAM

This book reports on advanced theories and methods in three related fields of research: applied physics, system science and computers. It is organized in two main parts, the first of which covers applied physics topics, including lasers and accelerators; condensed matter, soft matter and materials science; nanoscience and quantum engineering; atomic, molecular, optical and plasma physics; as well as nuclear and high-energy particle physics. It also addresses astrophysics, gravitation, earth and environmental science, as well as medical and biological physics. The second part focuses on advances in system science and computers, exploring automatic circuit control, power systems, computer communication, fluid mechanics, simulation and modeling, software engineering, data structures and applications of artificial intelligence among other areas. Offering a collection of contributions presented at the 1st International Conference on Applied Physics, System Science and Computers (APSAC 2016), the book bridges the gap between applied physics and electrical engineering. It not only to presents new methods, but also promotes collaborations between different communities working on related topics at the interface between physics and engineering, with a special focus on communication, data modeling and visualization, quantum information, applied mechanics as well as bio and geophysics.

Ideas That Created the Future Ten Speed Press

A complete update to a classic, respected resource Invaluable reference, supplying a comprehensive overview on how to undertake and present research

The Science of Computing Elsevier

A strikingly illustrated overview of the computing machines that have changed our world—from the abacus to the smartphone—and the people who made them, by the New York Times bestselling author and illustrator of *Women in Science*. "A beautifully illustrated journey through the history of computing, from the Antikythera mechanism to the iPhone and beyond—I loved it."—Eben Upton, Founder and CEO of Raspberry Pi ONE OF

THE BEST BOOKS OF THE YEAR: The New York Public Library Computers are everywhere and have impacted our lives in so many ways. But who created them, and why? How have they transformed the way that we interact with our surroundings and each other? Packed with accessible information, fun facts, and discussion starters, this charming and art-filled book takes you from the ancient world to the modern day, focusing on important inventions, from the earliest known counting systems to the sophisticated algorithms behind AI. The History of the Computer also profiles a diverse range of key players and creators—from An Wang and Margaret Hamilton to Steve Jobs and Sir Tim Berners-Lee—and illuminates their goals, their intentions, and the impact of their inventions on our everyday lives. This entertaining and educational journey will help you understand our most important machines and how we can use them to enhance the way we live. You'll never look at your phone the same way again!

On Growth, Form and Computers No Starch Press

'Algorithms to Live By' looks at the simple, precise algorithms that computers use to solve the complex 'human' problems that we face, and discovers what they can tell us about the nature and origin of the mind.

Computer Engineering for Babies Springer

A new framework for understanding computing: a coherent set of principles spanning technologies, domains, algorithms, architectures, and designs. Computing is usually viewed as a technology field that advances at the breakneck speed of Moore's Law. If we turn away even for a moment, we might miss a game-changing technological breakthrough or an earthshaking theoretical development. This book takes a different perspective, presenting computing as a science governed by fundamental principles that span all technologies. Computer science is a science of information processes. We need a new language to describe the science, and in this book Peter Denning and Craig Martell offer the great principles framework as just such a language. This is a book about the whole of computing—its algorithms, architectures, and designs. Denning and Martell divide the great principles of computing into six categories: communication, computation, coordination, recollection, evaluation, and design. They begin with an introduction to computing, its history, its many interactions with other fields, its

domains of practice, and the structure of the great principles framework. They go on to examine the great principles in different areas: information, machines, programming, computation, memory, parallelism, queueing, and design. Finally, they apply the great principles to networking, the Internet in particular. Great Principles of Computing will be essential reading for professionals in science and engineering fields with a "computational" branch, for practitioners in computing who want overviews of less familiar areas of computer science, and for non-computer science majors who want an accessible entry way to the field.

Scientific Programming and Computer Architecture MIT Press

David Harel explains and illustrates one of the most fundamental, yet under-exposed facets of computers - their inherent limitations.

Writing for Computer Science CRC Press

Teach Your Students How to Use Computing to Explore Powerful and Creative Ideas In the twenty-first century, computers have become indispensable in music making, distribution, performance, and consumption. Making Music with Computers: Creative Programming in Python introduces important concepts and skills necessary to generate music with computers.

Computers and Society University of Chicago Press

Conceived for both computer scientists and biologists alike, this collection of 22 essays highlights the important new role that computers play in developmental biology research. Essays show how through computer modeling, researchers gain further insight into developmental processes. Featured essays also cover their use in designing computer algorithms to tackle computer science problems in areas like neural network design, robot control, evolvable hardware, and more. Peter Bentley, noted for his prolific research on evolutionary computation, and Sanjeev Kumar head up a respected team to guide readers through these very complex and fascinating disciplines.* Covers both developmental biology and computational development -- the only book of its kind!* Provides introductory material and more detailed information on BOTH disciplines * Includes contributions from Richard Dawkins, Lewis Wolpert, Ian Stewart, and many other experts

The Computer Book Springer Science & Business Media

Recent developments in computer technology are providing historians with new ways to see—and seek to hear, touch, or smell—traces of the past. Place-based augmented reality applications are an increasingly common feature at heritage sites and museums, allowing historians to create immersive, multifaceted learning experiences. Now that computer vision can be directed at the past, research involving thousands of images can recreate lost or destroyed objects or environments, and discern patterns in vast datasets that could not be perceived by the naked eye. Seeing the Past with Computers is a collection of twelve thought-pieces on the current and potential uses of augmented reality and computer vision in historical research, teaching, and presentation. The experts gathered here reflect upon their experiences working with new technologies, share their ideas for best practices, and assess the implications of—and imagine future possibilities for—new methods of historical study. Among the experimental topics they explore are the use of augmented reality that empowers students to challenge the presentation of historical material in their textbooks; the application of seeing computers to unlock unusual cultural knowledge, such as the secrets of vaudevillian stage magic; hacking facial recognition technology to reveal victims of racism in a century-old Australian archive; and rebuilding the soundscape of an Iron Age village with aural augmented reality. This volume is a valuable resource for scholars and students of history and the digital humanities more broadly. It will inspire them to apply innovative methods to open new paths for conducting and sharing their own research.

The Energetics of Computing in Life and Machines CRC Press

With 250 illustrated landmark inventions, publications, and events--encompassing everything from ancient record-keeping devices to the latest technologies--this highly topical addition to the Sterling Milestones series takes a chronological journey through the history and future of computer science. The topics include the first spam message, Isaac Asimov's laws of robotics, early programming languages and operating systems such as BASIC and UNIX, the microcomputer revolution, hacking, virtual reality, and more.

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- [Spare By Prince Harry The Duke Of Sussex](#)
- [It Starts With Us: A Novel \(2\) \(it Ends With Us\)](#)
- [The Summer I Turned Pretty \(summer I Turned Pretty, The\) By Jenny Han](#)
- [The Shadow Work Journal: A Guide To Integrate And Transcend Your Shadows](#)
- [How To Catch A Leprechaun By Adam Wallace](#)
- [Mad Honey: A Novel](#)
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