

Automate This How Algorithms Took Over Our Markets Our Jobs And The World

Networks powered by algorithms are pervasive. Major contemporary technology trends—Internet of Things, Big Data, Digital Platform Power, Blockchain, and the Algorithmic Society—are manifestations of this phenomenon. The internet, which once seemed an unambiguous benefit to society, is now the basis for invasions of privacy, massive concentrations of power, and wide-scale manipulation. The algorithmic networked world poses deep questions about power, freedom, fairness, and human agency. The influential 1997 Federal Communications Commission whitepaper “Digital Tornado” hailed the “endless spiral of connectivity” that would transform society, and today, little remains untouched by digital connectivity. Yet fundamental questions remain unresolved, and even more serious challenges have emerged. This important collection, which offers a reckoning and a foretelling, features leading technology scholars who explain the legal, business, ethical, technical, and public policy challenges of building pervasive networks and algorithms for the benefit of humanity. This title is also available as Open Access on Cambridge Core.

A hands-on, problem-based introduction to building algorithms and data structures

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to solve problems with a computer. Algorithmic Thinking will teach you how to solve challenging programming problems and design your own algorithms. Daniel Zingaro, a master teacher, draws his examples from world-class programming competitions like USACO and IOI. You'll learn how to classify problems, choose data structures, and identify appropriate algorithms. You'll also learn how your choice of data structure, whether a hash table, heap, or tree, can affect runtime and speed up your algorithms; and how to adopt powerful strategies like recursion, dynamic programming, and binary search to solve challenging problems. Line-by-line breakdowns of the code will teach you how to use algorithms and data structures like:

- The breadth-first search algorithm to find the optimal way to play a board game or find the best way to translate a book
- Dijkstra's algorithm to determine how many mice can exit a maze or the number of fastest routes between two locations
- The union-find data structure to answer questions about connections in a social network or determine who are friends or enemies
- The heap data structure to determine the amount of money given away in a promotion
- The hash-table data structure to determine whether snowflakes are unique or identify compound words in a dictionary

NOTE: Each problem in this book is available on a programming-judge website. You'll find the site's URL and problem ID in the description. What's better than a free correctness check?

Market_Desc: · Electrical Engineering Students taking courses on VLSI systems,

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CAD tools for VLSI, Design Automation at Final Year or Graduate Level, Computer Science courses on the same topics, at a similar level· Practicing Engineers wishing to learn the state of the art in VLSI Design Automation· Designers of CAD tools for chip design in software houses or large electronics companies. Special Features: · Probably the first book on Design Automation for VLSI Systems which covers all stages of design from layout synthesis through logic synthesis to high-level synthesis· Clear, precise presentation of examples, well illustrated with over 200 figures· Focus on algorithms for VLSI design tools means it will appeal to some Computer Science as well as Electrical Engineering departments About The Book: Enrollments in VLSI design automation courses are not large but it's a very popular elective, especially for those seeking a career in the microelectronics industry. Already the reviewers seem very enthusiastic about the coverage of the book being a better match for their courses than available competitors, because it covers all design phases. It has plenty of worked problems and a large no. of illustrations. It's a good 'list-builder' title that matches our strategy of focusing on topics that lie on the interface between Elec Eng and Computer Science.

“A concise, insightful and sophisticated guide to maintaining humane values in an age of new machines.”—The New York Times Book Review “While we need to rewrite the rules of the twenty-first-century economy, Kevin’s book is a great look at how people can do this on a personal level to always put humanity first.”—Andrew

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Yang With a new afterword by the author You are being automated. After decades of hype and sci-fi fantasies, artificial intelligence is leaping out of research labs and into the center of our lives. Automation doesn't just threaten our jobs. It shapes our entire human experience, with AI and algorithms influencing the TV shows we watch, the music we listen to, the beliefs we hold, and the relationships we form. And while the age-old debate over whether automation will destroy jobs rages on, an even more important question is being ignored: How can we be happy, successful humans in a world that is increasingly built by and for machines? In *Futureproof: 9 Rules for Humans in the Age of Automation*, New York Times technology columnist Kevin Roose lays out a hopeful, pragmatic vision for how we can thrive in the age of AI and automation. He shares the secrets of people and organizations that have survived previous waves of technological change, and explains what skills are necessary to stay ahead of today's intelligent machines, with lessons like • Be surprising, social, and scarce. • Resist machine drift. • Leave handprints. • Demote your devices. • Treat AI like a chimp army. Roose rejects the conventional wisdom that in order to succeed in the AI age, we have to become more like machines ourselves—hyper-efficient, data-driven workhorses. Instead, he says, we should focus on being more human, and doing the kinds of creative, inspiring, and meaningful things even the most advanced robots can't do.

The greatest threat we face is not robots replacing us, but our reluctance to

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reinvent ourselves. We live in an age of wonder: cars that drive themselves, devices that anticipate our needs, and robots capable of everything from advanced manufacturing to complex surgery. Automation, algorithms, and AI will transform every facet of daily life, but are we prepared for what that means for the future of work, leadership, and creativity? While many already fear that robots will take their jobs, rapid advancements in machine intelligence raise a far more important question: what is the true potential of human intelligence in the twenty-first century? Futurist and global nomad Mike Walsh has synthesized years of research and interviews with some of the world's top business leaders, AI pioneers and data scientists into a set of 10 principles about what it takes to succeed in the algorithmic age. Across disparate cultures, industries, and timescales, Walsh brings to life the history and future of ideas like probabilistic thinking, machine learning, digital ethics, disruptive innovation, and de-centralized organizations as a foundation for a radically new approach to making decisions, solving problems, and leading people. The Algorithmic Leader offers a hopeful and practical guide for leaders of all types, and organizations of all sizes, to survive and thrive in this era of unprecedented change. By applying Walsh's 10 core principles, readers will be able to design their own journey of personal transformation, harness the power of algorithms, and chart a clear path ahead--for their company, their team, and themselves.

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A Guide to Solving Practical Problems

How to Get Ahead in a World of AI, Algorithms, Bots, and Big Data

Metrics at Work

Strategy and Leadership When Algorithms and Networks Run the World

The Ethical Algorithm

Weapons of Math Destruction

The Executive's How-To Guide to Automation

How High-Tech Tools Profile, Police, and Punish the Poor

Note for ebook customers: The design and layout of this book play a key role in conveying the author's message. When creating the ebooks, we've tried to keep the look and feel of the print edition, but this means that not all e-reading devices will support the files. The EPUB format is optimized for iPad. The Mobi files are optimized for Kindle Fire tablets and phones and for Kindle reading apps. Imagine you're in a game with one objective: a bestselling product or service. The rules? No marketing budget, no PR stunts, and it must be sustainably successful. No short-term fads. This is not a game of chance. It is a game of skill and strategy. And it begins with a single question: given competing products of equal pricing, promotion, and perceived quality, why does one outsell the others? The answer doesn't live in the sustainably successful products or services. The answer lives in

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those who use them. Our goal is to craft a strategy for creating successful users. And that strategy is full of surprising, counter-intuitive, and astonishingly simple techniques that don't depend on a massive marketing or development budget. Techniques typically overlooked by even the most well-funded, well-staffed product teams. Every role is a key player in this game. Product development, engineering, marketing, user experience, support—everyone on the team. Even if that team is a start-up of one. Armed with a surprisingly overlooked science and a unique POV, we can reduce the role of luck. We can build sustainably successful products and services that rely not on unethical persuasive marketing tricks but on helping our users have deeper, richer experiences. Not just in the moments while they're using our product but, more importantly, in the moments when they aren't.

Capitalist Nigger is an explosive and jarring indictment of the black race. The book asserts that the Negroid race, as naturally endowed as any other, is culpably a non-productive race, a consumer race that depends on other communities for its culture, its language, its feeding and its clothing. Despite enormous natural resources, blacks are economic slaves because they lack the 'devil-may-care' attitude and the 'killer instinct' of the Caucasian, as well as the spider web mentality of the Asian. A Capitalist Nigger must embody ruthlessness

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in pursuit of excellence in his drive towards achieving the goal of becoming an economic warrior. In putting forward the idea of the Capitalist Nigger, Chika Onyeani charts a road to success whereby black economic warriors employ the 'Spider Web Doctrine' – discipline, self-reliance, ruthlessness – to escape from their victim mentality. Born in Nigeria, Chika Onyeani is a journalist, editor and former diplomat.

The gap between theoretical ideas and messy reality, as seen in Neal Stephenson, Adam Smith, and Star Trek. We depend on—we believe in—algorithms to help us get a ride, choose which book to buy, execute a mathematical proof. It's as if we think of code as a magic spell, an incantation to reveal what we need to know and even what we want. Humans have always believed that certain invocations—the marriage vow, the shaman's curse—do not merely describe the world but make it. Computation casts a cultural shadow that is shaped by this long tradition of magical thinking. In this book, Ed Finn considers how the algorithm—in practical terms, “a method for solving a problem”—has its roots not only in mathematical logic but also in cybernetics, philosophy, and magical thinking. Finn argues that the algorithm deploys concepts from the idealized space of computation in a messy reality, with unpredictable and sometimes fascinating results. Drawing on sources that range from Neal Stephenson's Snow

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Crash to Diderot's Encyclopédie, from Adam Smith to the Star Trek computer, Finn explores the gap between theoretical ideas and pragmatic instructions. He examines the development of intelligent assistants like Siri, the rise of algorithmic aesthetics at Netflix, Ian Bogost's satiric Facebook game Cow Clicker, and the revolutionary economics of Bitcoin. He describes Google's goal of anticipating our questions, Uber's cartoon maps and black box accounting, and what Facebook tells us about programmable value, among other things. If we want to understand the gap between abstraction and messy reality, Finn argues, we need to build a model of "algorithmic reading" and scholarship that attends to process, spearheading a new experimental humanities.

"Refreshingly thought-provoking..." – The Financial Times

The essential playbook for the future of your business

What To Do When Machines Do Everything is a guidebook to succeeding in the next generation of the digital economy. When systems running on Artificial Intelligence can drive our cars, diagnose medical patients, and manage our finances more effectively than humans it raises profound questions on the future of work and how companies compete. Illustrated with real-world cases, data, and insight, the authors provide clear strategic guidance and actionable steps to help you and your organization move ahead in a world where exponentially

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developing new technologies are changing how value is created. Written by a team of business and technology expert practitioners—who also authored Code Halos: How the Digital Lives of People, Things, and Organizations are Changing the Rules of Business—this book provides a clear path to the future of your work. The first part of the book examines the once in a generation upheaval most every organization will soon face as systems of intelligence go mainstream. The authors argue that contrary to the doom and gloom that surrounds much of IT and business at the moment, we are in fact on the cusp of the biggest wave of opportunity creation since the Industrial Revolution. Next, the authors detail a clear-cut business model to help leaders take part in this coming boom; the AHEAD model outlines five strategic initiatives—Automate, Halos, Enhance, Abundance, and Discovery—that are central to competing in the next phase of global business by driving new levels of efficiency, customer intimacy and innovation. Business leaders today have two options: be swallowed up by the ongoing technological evolution, or ride the crest of the wave to new profits and better business. This book shows you how to avoid your own extinction event, and will help you; Understand the untold full extent of technology's impact on the way we work and live. Find out where we're headed, and how soon the future will arrive Leverage the new emerging paradigm into a sustainable business advantage Adopt

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a strategic model for winning in the new economy The digital world is already transforming how we work, live, and shop, how we are governed and entertained, and how we manage our money, health, security, and relationships. Don't let your business—or your career—get left behind. What To Do When Machines Do Everything is your strategic roadmap to a future full of possibility and success. Or peril. A groundbreaking narrative on the urgency of ethically designed AI and a guidebook to reimagining life in the era of intelligent technology. The Age of Intelligent Machines is upon us, and we are at a reflection point. The proliferation of fast-moving technologies, including forms of artificial intelligence akin to a new species, will cause us to confront profound questions about ourselves. The era of human intellectual superiority is ending, and we need to plan for this monumental shift. A Human Algorithm: How Artificial Intelligence Is Redefining Who We Are examines the immense impact intelligent technology will have on humanity. These machines, while challenging our personal beliefs and our socioeconomic world order, also have the potential to transform our health and well-being, alleviate poverty and suffering, and reveal the mysteries of intelligence and consciousness. International human rights attorney Flynn Coleman deftly argues that it is critical that we instill values, ethics, and morals into our robots, algorithms, and other forms of AI. Equally

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important, we need to develop and implement laws, policies, and oversight mechanisms to protect us from tech's insidious threats. To realize AI's transcendent potential, Coleman advocates for inviting a diverse group of voices to participate in designing our intelligent machines and using our moral imagination to ensure that human rights, empathy, and equity are core principles of emerging technologies. Ultimately, A Human Algorithm is a clarion call for building a more humane future and moving conscientiously into a new frontier of our own design. "[Coleman] argues that the algorithms of machine learning—if they are instilled with human ethics and values—could bring about a new era of enlightenment." –San Francisco Chronicle

Algorithms for VLSI Physical Design Automation

How Algorithms Took Over Our Markets, Our Jobs, and the World

We Are Data

Bandit Algorithms

How Search Engines Reinforce Racism

A Practical Implementation

9 Rules for Humans in the Age of Automation

Capitalist Nigger

Based on the authors' market leading data structures books in Java and C++, this textbook offers a comprehensive, definitive introduction to data

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structures in Python by authoritative authors. Data Structures and Algorithms in Python is the first authoritative object-oriented book available for the Python data structures course. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++.

Automate ThisHow Algorithms Took Over Our Markets, Our Jobs, and the WorldPenguin

The rousing story of the last gasp of human agency and how today's best and brightest minds are endeavoring to put an end to it. It used to be that to diagnose an illness, interpret legal documents, analyze foreign policy, or write a newspaper article you needed a human being with specific skills—and maybe an advanced degree or two. These days, high-level tasks are increasingly being handled by algorithms that can do precise work not only with speed but also with nuance. These “bots” started with human programming and logic, but now their reach extends beyond what their creators ever expected. In this fascinating, frightening book, Christopher Steiner tells the story of how algorithms took over—and shows why the “bot

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revolution” is about to spill into every aspect of our lives, often silently, without our knowledge. The May 2010 “Flash Crash” exposed Wall Street’s reliance on trading bots to the tune of a 998-point market drop and \$1 trillion in vanished market value. But that was just the beginning. In Automate This, we meet bots that are driving cars, penning haiku, and writing music mistaken for Bach’s. They listen in on our customer service calls and figure out what Iran would do in the event of a nuclear standoff. There are algorithms that can pick out the most cohesive crew of astronauts for a space mission or identify the next Jeremy Lin. Some can even ingest statistics from baseball games and spit out pitch-perfect sports journalism indistinguishable from that produced by humans. The interaction of man and machine can make our lives easier. But what will the world look like when algorithms control our hospitals, our roads, our culture, and our national security? What happens to businesses when we automate judgment and eliminate human instinct? And what role will be left for doctors, lawyers, writers, truck drivers, and many others? Who knows—maybe there’s a bot learning to do your job this minute. "a provocative new book" — The New York Times AI-centric organizations exhibit a new operating architecture, redefining how they create, capture, share, and deliver value. Now with a new preface that explores how the

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coronavirus crisis compelled organizations such as Massachusetts General Hospital, Verizon, and IKEA to transform themselves with remarkable speed, Marco Iansiti and Karim R. Lakhani show how reinventing the firm around data, analytics, and AI removes traditional constraints on scale, scope, and learning that have restricted business growth for hundreds of years. From Airbnb to Ant Financial, Microsoft to Amazon, research shows how AI-driven processes are vastly more scalable than traditional processes, allow massive scope increase, enabling companies to straddle industry boundaries, and create powerful opportunities for learning—to drive ever more accurate, complex, and sophisticated predictions. When traditional operating constraints are removed, strategy becomes a whole new game, one whose rules and likely outcomes this book will make clear. Iansiti and Lakhani: Present a framework for rethinking business and operating models Explain how "collisions" between AI-driven/digital and traditional/analog firms are reshaping competition, altering the structure of our economy, and forcing traditional companies to rearchitect their operating models Explain the opportunities and risks created by digital firms Describe the new challenges and responsibilities for the leaders of both digital and traditional firms Packed with examples—including many from the most powerful and innovative global,

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AI-driven competitors—and based on research in hundreds of firms across many sectors, this is your essential guide for rethinking how your firm competes and operates in the era of AI.

What identity means in an algorithmic age: how it works, how our lives are controlled by it, and how we can resist it Algorithms are everywhere, organizing the near limitless data that exists in our world. Derived from our every search, like, click, and purchase, algorithms determine the news we get, the ads we see, the information accessible to us and even who our friends are. These complex configurations not only form knowledge and social relationships in the digital and physical world, but also determine who we are and who we can be, both on and offline. Algorithms create and recreate us, using our data to assign and reassign our gender, race, sexuality, and citizenship status. They can recognize us as celebrities or mark us as terrorists. In this era of ubiquitous surveillance, contemporary data collection entails more than gathering information about us. Entities like Google, Facebook, and the NSA also decide what that information means, constructing our worlds and the identities we inhabit in the process. We have little control over who we algorithmically are. Our identities are made useful not for us—but for someone else. Through a series of entertaining and engaging

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examples, John Cheney-Lippold draws on the social constructions of identity to advance a new understanding of our algorithmic identities. We Are Data will educate and inspire readers who want to wrest back some freedom in our increasingly surveilled and algorithmically-constructed world.

New Directions in the Study of Computation and Journalism

Calculative Devices in the Age of Big Data

How Big Data Increases Inequality and Threatens Democracy

Algorithmic Power and Politics

The Science of Socially Aware Algorithm Design

Data Structure and Algorithms Using C++

The Cambridge Handbook of the Law of Algorithms

Imagine an everyday world in which the price of gasoline (and oil) continues to go up, and up, and up. Think about the immediate impact that would have on our lives. Of course, everybody already knows how about gasoline has affected our driving habits. People can't wait to junk their gas-guzzling SUVs for a new Prius. But there are more, not-so-obvious changes on the horizon that Chris Steiner tracks brilliantly in this provocative work. Consider the following societal changes: people who own homes in far-off suburbs will soon realize that there's no longer

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any market for their houses (reason: nobody wants to live too far away because it's too expensive to commute to work). Telecommuting will begin to expand rapidly. Trains will become the mode of national transportation (as it used to be) as the price of flying becomes prohibitive. Families will begin to migrate southward as the price of heating northern homes in the winter is too pricey. Cheap everyday items that are comprised of plastic will go away because of the rising price to produce them (plastic is derived from oil). And this is just the beginning of a huge and overwhelming domino effect that our way of life will undergo in the years to come. Steiner, an engineer by training before turning to journalism, sees how this simple but constant rise in oil and gas prices will totally re-structure our lifestyle. But what may be surprising to readers is that all of these changes may not be negative - but actually will usher in some new and very promising aspects of our society. Steiner will probe how the liberation of technology and innovation, triggered by climbing gas prices, will change our lives. The book may start as an alarmist's exercise.... but don't be misled. The future will be exhilarating.

The starkly different ways that American and French online news companies respond to audience analytics and what this means for the future of news When the news moved online, journalists suddenly learned what their audiences

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actually liked, through algorithmic technologies that scrutinize web traffic and activity. Has this advent of audience metrics changed journalists' work practices and professional identities? In *Metrics at Work*, Angèle Le Christin documents the ways that journalists grapple with audience data in the form of clicks, and analyzes how new forms of clickbait journalism travel across national borders. Drawing on four years of fieldwork in web newsrooms in the United States and France, including more than one hundred interviews with journalists, Christin reveals many similarities among the media groups examined—their editorial goals, technological tools, and even office furniture. Yet she uncovers crucial and paradoxical differences in how American and French journalists understand audience analytics and how these affect the news produced in each country. American journalists routinely disregard traffic numbers and primarily rely on the opinion of their peers to define journalistic quality. Meanwhile, French journalists fixate on internet traffic and view these numbers as a sign of their resonance in the public sphere. Christin offers cultural and historical explanations for these disparities, arguing that distinct journalistic traditions structure how journalists make sense of digital measurements in the two countries. Contrary to the popular belief that analytics and algorithms are globally homogenizing forces, *Metrics at Work* shows that computational technologies can have surprisingly divergent

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ramifications for work and organizations worldwide.

Newly revised to specifically address Microsoft Excel 2019, this book shows the capabilities of Excel in teaching engineering statistics effectively. Similar to the previously published Excel 2016 for Engineering Statistics, this volume is a step-by-step, exercise-driven guide for students and practitioners who need to master Excel to solve practical engineering problems. Excel, a widely available computer program for students and professionals, is also an effective teaching and learning tool for quantitative analyses in engineering courses. Its powerful computational ability and graphical functions make learning statistics much easier than in years past. Excel 2019 for Engineering Statistics capitalizes on these improvements by teaching readers how to apply Excel to statistical techniques necessary in their courses and work. Each chapter explains statistical formulas and directs the reader to use Excel commands to solve specific, easy-to-understand engineering problems. Practice problems are provided at the end of each chapter with their solutions in an appendix. Separately, there is a full practice test (with answers in an appendix) that allows readers to test what they have learned. This new edition features a wealth of new sample problems and solutions, as well as updated chapter content throughout.

A revealing look at how negative biases against women of color are embedded in

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search engine results and algorithms Run a Google search for “black girls”—what will you find? “Big Booty” and other sexually explicit terms are likely to come up as top search terms. But, if you type in “white girls,” the results are radically different. The suggested porn sites and un-moderated discussions about “why black women are so sassy” or “why black women are so angry” presents a disturbing portrait of black womanhood in modern society. In *Algorithms of Oppression*, Safiya Umoja Noble challenges the idea that search engines like Google offer an equal playing field for all forms of ideas, identities, and activities. Data discrimination is a real social problem; Noble argues that the combination of private interests in promoting certain sites, along with the monopoly status of a relatively small number of Internet search engines, leads to a biased set of search algorithms that privilege whiteness and discriminate against people of color, specifically women of color. Through an analysis of textual and media searches as well as extensive research on paid online advertising, Noble exposes a culture of racism and sexism in the way discoverability is created online. As search engines and their related companies grow in importance—operating as a source for email, a major vehicle for primary and secondary school learning, and beyond—understanding and reversing these disquieting trends and discriminatory practices is of utmost importance. An

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original, surprising and, at times, disturbing account of bias on the internet, Algorithms of Oppression contributes to our understanding of how racism is created, maintained, and disseminated in the 21st century.

Algorithms for VLSI Physical Design Automation is a core reference text for graduate students and CAD professionals. It provides a comprehensive treatment of the principles and algorithms of VLSI physical design. Algorithms for VLSI Physical Design Automation presents the concepts and algorithms in an intuitive manner. Each chapter contains 3-4 algorithms that are discussed in detail. Additional algorithms are presented in a somewhat shorter format. References to advanced algorithms are presented at the end of each chapter. Algorithms for VLSI Physical Design Automation covers all aspects of physical design. The first three chapters provide the background material while the subsequent chapters focus on each phase of the physical design cycle. In addition, newer topics like physical design automation of FPGAs and MCMs have been included. The author provides an extensive bibliography which is useful for finding advanced material on a topic. Algorithms for VLSI Physical Design Automation is an invaluable reference for professionals in layout, design automation and physical design.

The Fight for a Human Future at the New Frontier of Power

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Algorithmic Life

What To Do When Machines Do Everything

Life by Algorithms

Algorithmic Thinking

Imagination in the Age of Computing

Practical Programming for Total Beginners

Futureproof

“[Ada Lovelace], like Steve Jobs, stands at the intersection of arts and technology.”—Walter Isaacson, author of *The Innovators* Over 150 years after her death, a widely-used scientific computer program was named “Ada,” after Ada Lovelace, the only legitimate daughter of the eighteenth century’s version of a rock star, Lord Byron. Why? Because, after computer pioneers such as Alan Turing began to rediscover her, it slowly became apparent that she had been a key but overlooked figure in the invention of the computer. In *Ada Lovelace*, James Essinger makes the case that the computer age could have started two centuries ago if Lovelace’s contemporaries had recognized her research and fully grasped its implications. It’s a remarkable tale, starting with the outrageous behavior of her father, which made Ada instantly famous upon birth. Ada would go on to overcome numerous obstacles to obtain a level of education typically forbidden to women of her day. She would eventually join forces with Charles Babbage, generally

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credited with inventing the computer, although as Essinger makes clear, Babbage couldn't have done it without Lovelace. Indeed, Lovelace wrote what is today considered the world's first computer program—despite opposition that the principles of science were “beyond the strength of a woman's physical power of application.” Based on ten years of research and filled with fascinating characters and observations of the period, not to mention numerous illustrations, Essinger tells Ada's fascinating story in unprecedented detail to absorbing and inspiring effect.

Algorithms are a fundamental building block of artificial intelligence - and, increasingly, society - but our legal institutions have largely failed to recognize or respond to this reality. The Cambridge Handbook of the Law of Algorithms, which features contributions from US, EU, and Asian legal scholars, discusses the specific challenges algorithms pose not only to current law, but also - as algorithms replace people as decision makers - to the foundations of society itself. The work includes wide coverage of the law as it relates to algorithms, with chapters analyzing how human biases have crept into algorithmic decision-making about who receives housing or credit, the length of sentences for defendants convicted of crimes, and many other decisions that impact constitutionally protected groups. Other issues covered in the work include the impact of algorithms on the law of free speech, intellectual property, and commercial and human rights law.

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A comprehensive and rigorous introduction for graduate students and researchers, with applications in sequential decision-making problems.

WINNER: The 2018 McGannon Center Book Prize and shortlisted for the Goddard Riverside Stephan Russo Book Prize for Social Justice The New York Times Book Review: "Riveting." Naomi Klein: "This book is downright scary." Ethan Zuckerman, MIT: "Should be required reading." Dorothy Roberts, author of *Killing the Black Body*: "A must-read." Astra Taylor, author of *The People's Platform*: "The single most important book about technology you will read this year." Cory Doctorow: "Indispensable." A powerful investigative look at data-based discrimination—and how technology affects civil and human rights and economic equity The State of Indiana denies one million applications for healthcare, foodstamps and cash benefits in three years—because a new computer system interprets any mistake as “failure to cooperate.” In Los Angeles, an algorithm calculates the comparative vulnerability of tens of thousands of homeless people in order to prioritize them for an inadequate pool of housing resources. In Pittsburgh, a child welfare agency uses a statistical model to try to predict which children might be future victims of abuse or neglect. Since the dawn of the digital age, decision-making in finance, employment, politics, health and human services has undergone revolutionary change. Today, automated systems—rather than humans—control which neighborhoods get policed, which families attain needed resources, and who is

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investigated for fraud. While we all live under this new regime of data, the most invasive and punitive systems are aimed at the poor. In *Automating Inequality*, Virginia Eubanks systematically investigates the impacts of data mining, policy algorithms, and predictive risk models on poor and working-class people in America. The book is full of heart-wrenching and eye-opening stories, from a woman in Indiana whose benefits are literally cut off as she lays dying to a family in Pennsylvania in daily fear of losing their daughter because they fit a certain statistical profile. The U.S. has always used its most cutting-edge science and technology to contain, investigate, discipline and punish the destitute. Like the county poorhouse and scientific charity before them, digital tracking and automated decision-making hide poverty from the middle-class public and give the nation the ethical distance it needs to make inhumane choices: which families get food and which starve, who has housing and who remains homeless, and which families are broken up by the state. In the process, they weaken democracy and betray our most cherished national values. This deeply researched and passionate book could not be more timely. How the rise of computerized decision-making affects every aspect of business and daily life The bot takeover began with high frequency trading on Wall Street, and from there it spread to all manners of high-level tasks—such as diagnosing illnesses or interpreting legal documents. There is no realm of human endeavor safe from algorithms that employ speed, precision and nuance. In this fascinating book, Steiner tells the story of how

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algorithms took over and shows why the “bot revolution” is about to spill into every aspect of our lives. We meet bots that are driving cars, penning haikus, and writing music mistaken for Bach’s. They listen in on customer service calls and figure out what Iran would do in the event of a nuclear standoff. On Wall Street, pre-programmed algorithmic deals are executed by machines faster than any human could—leaving human investors at a severe disadvantage. But what will the world look like when algorithms control our hospitals, our roads, and our national security? Is a stock market controlled by high-speed trading bots worth investing in? And what role will be left for doctors, lawyers, writers, truck drivers, and many others?

\$20 Per Gallon

Excel 2019 for Engineering Statistics

What Algorithms Want

An Introduction to Algorithmic Trading

Algorithms, Automation, and News

Mastering AI and Algorithm-Driven Business

Competing in the Age of AI

How the Inevitable Rise in the Price of Gasoline Will Change Our Lives for the Better

The challenges to humanity posed by the digital future, the first detailed examination of the unprecedented form of power

called "surveillance capitalism," and the quest by powerful corporations to predict and control our behavior. In this masterwork of original thinking and research, Shoshana Zuboff provides startling insights into the phenomenon that she has named surveillance capitalism. The stakes could not be higher: a global architecture of behavior modification threatens human nature in the twenty-first century just as industrial capitalism disfigured the natural world in the twentieth. Zuboff vividly brings to life the consequences as surveillance capitalism advances from Silicon Valley into every economic sector. Vast wealth and power are accumulated in ominous new "behavioral futures markets," where predictions about our behavior are bought and sold, and the production of goods and services is subordinated to a new "means of behavioral modification." The threat has shifted from a totalitarian Big Brother state to a ubiquitous digital architecture: a "Big Other" operating in the interests of surveillance capital. Here is the crucible of an unprecedented form of power marked by extreme concentrations of knowledge and free from democratic

oversight. Zuboff's comprehensive and moving analysis lays bare the threats to twenty-first century society: a controlled "hive" of total connection that seduces with promises of total certainty for maximum profit -- at the expense of democracy, freedom, and our human future. With little resistance from law or society, surveillance capitalism is on the verge of dominating the social order and shaping the digital future -- if we let it.

Algorithmic trading, once the exclusive domain of institutional players, is now open to small organizations and individual traders using online platforms. The tool of choice for many traders today is Python and its ecosystem of powerful packages. In this practical book, author Yves Hilpisch shows students, academics, and practitioners how to use Python in the fascinating field of algorithmic trading. You'll learn several ways to apply Python to different aspects of algorithmic trading, such as backtesting trading strategies and interacting with online trading platforms. Some of the biggest buy- and sell-side institutions make heavy use of Python. By exploring

options for systematically building and deploying automated algorithmic trading strategies, this book will help you level the playing field. Set up a proper Python environment for algorithmic trading Learn how to retrieve financial data from public and proprietary data sources Explore vectorization for financial analytics with NumPy and pandas Master vectorized backtesting of different algorithmic trading strategies Generate market predictions by using machine learning and deep learning Tackle real-time processing of streaming data with socket programming tools Implement automated algorithmic trading strategies with the OANDA and FXCM trading platforms

This book presents recent advances in automated machine learning (AutoML) and automated algorithm design and indicates the future directions in this fast-developing area. Methods have been developed to automate the design of neural networks, heuristics and metaheuristics using techniques such as metaheuristics, statistical techniques, machine learning and hyper-heuristics. The book first defines

the field of automated design, distinguishing it from the similar but different topics of automated algorithm configuration and automated algorithm selection. The chapters report on the current state of the art by experts in the field and include reviews of AutoML and automated design of search, theoretical analyses of automated algorithm design, automated design of control software for robot swarms, and overfitting as a benchmark and design tool. Also covered are automated generation of constructive and perturbative low-level heuristics, selection hyper-heuristics for automated design, automated design of deep-learning approaches using hyper-heuristics, genetic programming hyper-heuristics with transfer knowledge and automated design of classification algorithms. The book concludes by examining future research directions of this rapidly evolving field. The information presented here will especially interest researchers and practitioners in the fields of artificial intelligence, computational intelligence, evolutionary computation and optimisation.

Longlisted for the National Book Award New York Times Bestseller A former Wall Street quant sounds an alarm on the mathematical models that pervade modern life -- and threaten to rip apart our social fabric We live in the age of the algorithm. Increasingly, the decisions that affect our lives--where we go to school, whether we get a car loan, how much we pay for health insurance--are being made not by humans, but by mathematical models. In theory, this should lead to greater fairness: Everyone is judged according to the same rules, and bias is eliminated. But as Cathy O'Neil reveals in this urgent and necessary book, the opposite is true. The models being used today are opaque, unregulated, and uncontestable, even when they're wrong. Most troubling, they reinforce discrimination: If a poor student can't get a loan because a lending model deems him too risky (by virtue of his zip code), he's then cut off from the kind of education that could pull him out of poverty, and a vicious spiral ensues. Models are propping up the lucky and punishing the downtrodden, creating a "toxic cocktail for democracy."

Welcome to the dark side of Big Data. Tracing the arc of a person's life, O'Neil exposes the black box models that shape our future, both as individuals and as a society. These "weapons of math destruction" score teachers and students, sort resumes, grant (or deny) loans, evaluate workers, target voters, set parole, and monitor our health. O'Neil calls on modelers to take more responsibility for their algorithms and on policy makers to regulate their use. But in the end, it's up to us to become more savvy about the models that govern our lives. This important book empowers us to ask the tough questions, uncover the truth, and demand change. -- Longlist for National Book Award (Non-Fiction) -- Goodreads, semi-finalist for the 2016 Goodreads Choice Awards (Science and Technology) -- Kirkus, Best Books of 2016 -- New York Times, 100 Notable Books of 2016 (Non-Fiction) -- The Guardian, Best Books of 2016 -- WBUR's "On Point," Best Books of 2016: Staff Picks -- Boston Globe, Best Books of 2016, Non-Fiction From deepfakes to GPT-3, deep learning is now powering a new assault on our ability to tell what's real and what's not,

bringing a whole new algorithmic side to fake news. On the other hand, remarkable methods are being developed to help automate fact-checking and the detection of fake news and doctored media. Success in the modern business world requires you to understand these algorithmic currents, and to recognize the strengths, limits, and impacts of deep learning---especially when it comes to discerning the truth and differentiating fact from fiction. This book tells the stories of this algorithmic battle for the truth and how it impacts individuals and society at large. In doing so, it weaves together the human stories and what's at stake here, a simplified technical background on how these algorithms work, and an accessible survey of the research literature exploring these various topics. How Algorithms Create and Prevent Fake News is an accessible, broad account of the various ways that data-driven algorithms have been distorting reality and rendering the truth harder to grasp. From news aggregators to Google searches to YouTube recommendations to Facebook news feeds, the way we obtain information today is filtered

through the lens of tech giant algorithms. The way data is collected, labelled, and stored has a big impact on the machine learning algorithms that are trained on it, and this is a main source of algorithmic bias - which gets amplified in harmful data feedback loops. Don't be afraid: with this book you'll see the remedies and technical solutions that are being applied to oppose these harmful trends. There is hope. What You Will Learn The ways that data labeling and storage impact machine learning and how feedback loops can occur The history and inner-workings of YouTube's recommendation algorithm The state-of-the-art capabilities of AI-powered text generation (GPT-3) and video synthesis/doctoring (deepfakes) and how these technologies have been used so far The algorithmic tools available to help with automated fact-checking and truth-detection Who This Book is For People who don't have a technical background (in data, computers, etc.) but who would like to learn how algorithms impact society; business leaders who want to know the powers and perils of relying on artificial intelligence. A secondary audience is people with a technical

background who want to explore the larger social and societal impact of their work.

Python for Algorithmic Trading

Hello World

The Algorithmic Leader

Algorithms and the Making of Our Digital Selves

Automate This

How Artificial Intelligence Is Redefining Who We Are

Ada's Algorithm

Automated Design of Machine Learning and Search Algorithms

From driverless cars to pilotless planes, many functions that have previously required human labor can now be performed using artificial intelligence. For businesses, this use of AI results in reduced labor costs and, even more important, creating a competitive advantage. How does one look at any organization and begin the work of automating it in sensible ways? This book provides the blueprint for automating critical business functions of all kinds. It outlines the skills and technologies that must be

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brought to bear on replicating human-like thinking and judgment in the form of algorithms. Many believe that algorithm design is the exclusive purview of computer scientists and experienced programmers. This book aims to dispel that notion. An algorithm is merely a set of rules, and anyone with the ability to envision how different components of a business can interact with other components already has the ability to work in algorithms. Though many fear that the use of automation in business means human labor will no longer be needed, the author argues that organizations will re-purpose humans into different roles under the banner of automation, not simply get rid of them. He also identifies parts of business that are best targeted for automation. This book will arm business people with the tools needed to automate companies, making them perform better, move faster, operate cheaper, and provide great lasting value to investors.

We live in a world in which Google's search algorithms determine how we access information, Facebook's News Feed

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algorithms shape how we socialize, and Netflix collaborative filtering algorithms choose the media products we consume. As such, we live algorithmic lives. Life, however, is not blindly controlled or determined by algorithms. Nor are we simply victims of an ever-expanding artificial intelligence. Rather than looking at how technologies shape or are shaped by political institutions, this book is concerned with the ways in which informational infrastructure may be considered political in its capacity to shape social and cultural life. It looks specifically at the conditions of algorithmic life -- how algorithms work, both materially and discursively, to create the conditions for sociality and connectivity. The book argues that the most important aspect of algorithms is not what they are in terms of their specific technical details but rather how they become part of social practices and how different people enlist them as powerful brokers of information, communication and society. If we truly want to engage with the promises of automation and predictive analytics

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entailed by the promises of "big data", we also need to understand the contours of algorithmic life that condition such practices. Setting out to explore both the specific uses of algorithms and the cultural forms they generate, this book offers a novel understanding of the power and politics of algorithmic life as grounded in case studies that explore the material-discursive dimensions of software.

A strategic model for identifying, evaluating, and improving information use "Fundamentally changes how you look at the role of information technology and takes it to the leadership level, which is the only way for business performance to be maximized in this global economy." --Ron Milton, Executive Vice President, Computerworld

"Information Revolution is truly a must-read for those who generate, support, and make decisions for their respective organizations. By the way, that would be everybody." --Bob Schwartz, Vice President and Chief Information Officer, Panasonic Corporation of North America "As this book

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clearly describes, information management advances both through evolution and intelligent design. The ideas herein will help any organization avoid extinction!" --Thomas H. Davenport, President's Distinguished Professor and Director of Research, Babson College "This model captures the best practices from the early stage of Business Intelligence development through the most sophisticated environments where the value and nature of information is unquestioned. All of us should strive to reach the final level. And now we have the ultimate guide to help us get there." --Claudia Imhoff, President, Intelligent Solutions, Inc. "Managing a successful Business Intelligence effort requires a long-term view and this means leaders must have a methodology to guide them as they navigate their organization through the BI evolution. Information Revolution provides the pragmatic road map all executives can understand and follow." --Irving Tyler, Chief Information Officer, Quaker Chemical Corporation "Information Revolution is the perfect blend of 'what,' 'how,' and especially 'why.' This book is a must-

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read for those driven to excel in this information-based world, instead of being another 'me, too' along for the ride." --Bruce Barnes, former chief information officer, Nationwide Financial Services "Information Revolution provides a powerful framework for assessing the current state of your company's systems and its decision making capabilities. It then presents a clear process for moving your systems and your company toward an adaptive and innovative enterprise." --Michael Hugos, Chief Information Officer, Network Services Company

Computerized processes are everywhere in our society. They are the automated phone messaging systems that businesses use to screen calls; the link between student standardized test scores and public schools' access to resources; the algorithms that regulate patient diagnoses and reimbursements to doctors. The storage, sorting, and analysis of massive amounts of information have enabled the automation of decision-making at an unprecedented level. Meanwhile, computers have offered a model of cognition that

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increasingly shapes our approach to the world. The proliferation of “roboprocesses” is the result, as editors Catherine Besteman and Hugh Gusterson observe in this rich and wide-ranging volume, which features contributions from a distinguished cast of scholars in anthropology, communications, international studies, and political science. Although automatic processes are designed to be engines of rational systems, the stories in Life by Algorithms reveal how they can in fact produce absurd, inflexible, or even dangerous outcomes. Joining the call for “algorithmic transparency,” the contributors bring exceptional sensitivity to everyday sociality into their critique to better understand how the perils of modern technology affect finance, medicine, education, housing, the workplace, food production, public space, and emotions—not as separate problems but as linked manifestations of a deeper defect in the fundamental ordering of our society.

This book examines the growing importance of algorithms and

automation—including emerging forms of artificial intelligence—in the gathering, composition, and distribution of news. In it the authors connect a long line of research on journalism and computation with scholarly and professional terrain yet to be explored. Taken as a whole, these chapters share some of the noble ambitions of the pioneering publications on ‘reporting algorithms’, such as a desire to see computing help journalists in their watchdog role by holding power to account. However, they also go further, firstly by addressing the fuller range of technologies that computational journalism now consists of: from chatbots and recommender systems to artificial intelligence and atomised journalism. Secondly, they advance the literature by demonstrating the increased variety of uses for these technologies, including engaging underserved audiences, selling subscriptions, and recombining and re-using content. Thirdly, they problematise computational journalism by, for example, pointing out some of the challenges inherent in applying

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artificial intelligence to investigative journalism and in trying to preserve public service values. Fourthly, they offer suggestions for future research and practice, including by presenting a framework for developing democratic news recommenders and another that may help us think about computational journalism in a more integrated, structured manner. The chapters in this book were originally published as a special issue of Digital Journalism.

The Age of Surveillance Capitalism

If... Then

How to Be Human in the Age of the Machine

The Road To Success – A Spider Web Doctrine

After the Digital Tornado

Using the Information Evolution Model to Grow Your Business

Automating Inequality

How Roboprocesses Are Remaking Our World

This book critically explores forms and techniques of calculation that emerge with digital computation, and their implications. The contributors demonstrate that

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digital calculative devices matter beyond their specific functions as they progressively shape, transform and govern all areas of our life. In particular, it addresses such questions as: How does the drive to make sense of, and productively use, large amounts of diverse data, inform the development of new calculative devices, logics and techniques? How do these devices, logics and techniques affect our capacity to decide and to act? How do mundane elements of our physical and virtual existence become data to be analysed and rearranged in complex ensembles of people and things? In what ways are conventional notions of public and private, individual and population, certainty and probability, rule and exception transformed and what are the consequences? How does the search for 'hidden' connections and patterns change our understanding of social relations and associative life? Do contemporary modes of calculation produce new thresholds of calculability and computability, allowing for the improbable or the merely possible to be embraced and acted upon? As contemporary approaches to governing uncertain futures seek to anticipate future events, how are calculation and decision engaged anew? Drawing together different strands of cutting-edge research that is both theoretically sophisticated and empirically rich, this book makes an important contribution to several areas of scholarship, including the emerging social science field of software studies, and will be a vital resource for students and scholars alike.

Everyone knows that programming plays a vital role as a solution to automate and execute a task in a proper manner. Irrespective of mathematical problems, the

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skills of programming are necessary to solve any type of problems that may be correlated to solve real life problems efficiently and effectively. This book is intended to flow from the basic concepts of C++ to technicalities of the programming language, its approach and debugging. The chapters of the book flow with the formulation of the problem, it's designing, finding the step-by-step solution procedure along with its compilation, debugging and execution with the output. Keeping in mind the learner's sentiments and requirements, the exemplary programs are narrated with a simple approach so that it can lead to creation of good programs that not only executes properly to give the output, but also enables the learners to incorporate programming skills in them. The style of writing a program using a programming language is also emphasized by introducing the inclusion of comments wherever necessary to encourage writing more readable and well commented programs. As practice makes perfect, each chapter is also enriched with practice exercise questions so as to build the confidence of writing the programs for learners. The book is a complete and all-inclusive handbook of C++ that covers all that a learner as a beginner would expect, as well as complete enough to go ahead with advanced programming. This book will provide a fundamental idea about the concepts of data structures and associated algorithms. By going through the book, the reader will be able to understand about the different types of algorithms and at which situation and what type of algorithms will be applicable.

'One of the best books yet written on data and algorithms. . .deserves a place on

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the bestseller charts.' (The Times) You are accused of a crime. Who would you rather determined your fate - a human or an algorithm? An algorithm is more consistent and less prone to error of judgement. Yet a human can look you in the eye before passing sentence. Welcome to the age of the algorithm, the story of a not-too-distant future where machines rule supreme, making important decisions - in healthcare, transport, finance, security, what we watch, where we go even who we send to prison. So how much should we rely on them? What kind of future do we want? Hannah Fry takes us on a tour of the good, the bad and the downright ugly of the algorithms that surround us. In Hello World she lifts the lid on their inner workings, demonstrates their power, exposes their limitations, and examines whether they really are an improvement on the humans they are replacing. A BBC RADIO 4- BOOK OF THE WEEK SHORTLISTED FOR THE 2018 BAILLIE GIFFORD PRIZE AND 2018 ROYAL SOCIETY SCIENCE BOOK PRIZE

Over the course of a generation, algorithms have gone from mathematical abstractions to powerful mediators of daily life. Algorithms have made our lives more efficient, more entertaining, and, sometimes, better informed. At the same time, complex algorithms are increasingly violating the basic rights of individual citizens. Allegedly anonymized datasets routinely leak our most sensitive personal information; statistical models for everything from mortgages to college admissions reflect racial and gender bias. Meanwhile, users manipulate algorithms to "game" search engines, spam filters, online reviewing services, and navigation apps. Understanding and improving the science behind the algorithms that run our lives

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is rapidly becoming one of the most pressing issues of this century. Traditional fixes, such as laws, regulations and watchdog groups, have proven woefully inadequate. Reporting from the cutting edge of scientific research, *The Ethical Algorithm* offers a new approach: a set of principled solutions based on the emerging and exciting science of socially aware algorithm design. Michael Kearns and Aaron Roth explain how we can better embed human principles into machine code - without halting the advance of data-driven scientific exploration. Weaving together innovative research with stories of citizens, scientists, and activists on the front lines, *The Ethical Algorithm* offers a compelling vision for a future, one in which we can better protect humans from the unintended impacts of algorithms while continuing to inspire wondrous advances in technology.

Interest in algorithmic trading is growing massively – it's cheaper, faster and better to control than standard trading, it enables you to 'pre-think' the market, executing complex math in real time and take the required decisions based on the strategy defined. We are no longer limited by human 'bandwidth'. The cost alone (estimated at 6 cents per share manual, 1 cent per share algorithmic) is a sufficient driver to power the growth of the industry. According to consultant firm, Aite Group LLC, high frequency trading firms alone account for 73% of all US equity trading volume, despite only representing approximately 2% of the total firms operating in the US markets. Algorithmic trading is becoming the industry lifeblood. But it is a secretive industry with few willing to share the secrets of their success. The book begins with a step-by-step guide to algorithmic trading, demystifying this complex subject and

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providing readers with a specific and usable algorithmic trading knowledge. It provides background information leading to more advanced work by outlining the current trading algorithms, the basics of their design, what they are, how they work, how they are used, their strengths, their weaknesses, where we are now and where we are going. The book then goes on to demonstrate a selection of detailed algorithms including their implementation in the markets. Using actual algorithms that have been used in live trading readers have access to real time trading functionality and can use the never before seen algorithms to trade their own accounts. The markets are complex adaptive systems exhibiting unpredictable behaviour. As the markets evolve algorithmic designers need to be constantly aware of any changes that may impact their work, so for the more adventurous reader there is also a section on how to design trading algorithms. All examples and algorithms are demonstrated in Excel on the accompanying CD ROM, including actual algorithmic examples which have been used in live trading.

Algorithms of Oppression

Exploring the Impacts of Social Media, Deepfakes, GPT-3, and More

How to Be Smart When Machines Are Smarter Than You

Automate the Boring Stuff with Python, 2nd Edition

Badass: Making Users Awesome

A Human Algorithm

ALGORITHMS VLSI DESIGN AUTOMATION

Data Structures and Algorithms in Python

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The second edition of this best-selling Python book (over 500,000 copies sold!) uses Python 3 to teach even the technically uninclined how to write programs that do in minutes what would take hours to do by hand. There is no prior programming experience required and the book is loved by liberal arts majors and geeks alike. If you've ever spent hours renaming files or updating hundreds of spreadsheet cells, you know how tedious tasks like these can be. But what if you could have your computer do them for you? In this fully revised second edition of the best-selling classic Automate the Boring Stuff with Python, you'll learn how to use Python to write programs that do in minutes what would take you hours to do by hand--no prior programming experience required. You'll learn the basics of Python and explore Python's rich library of modules for performing specific tasks, like scraping data off websites, reading PDF and Word documents, and automating clicking and typing tasks. The second edition of this international fan favorite includes a brand-new chapter on input validation, as well as tutorials on automating Gmail and Google Sheets, plus tips on automatically updating CSV files. You'll learn how to create programs that effortlessly perform useful feats of automation to:

- Search for text in a file or across multiple files
- Create, update, move, and rename files and folders
- Search the Web and download online content
- Update and format data in Excel spreadsheets of any size
- Split, merge, watermark, and encrypt PDFs
- Send email responses and text notifications
- Fill out online forms

Step-by-step instructions walk you through each program, and updated practice projects at the end of each chapter challenge you to improve those programs and use your newfound skills to automate similar tasks. Don't spend your time doing work a well-trained monkey could do. Even if you've never written a line of code, you can make your computer do the grunt work. Learn how in Automate the

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Boring Stuff with Python, 2nd Edition.

Basic to Advanced Strategies

Networks, Algorithms, Humanity

A Problem-Based Introduction

How Lord Byron's Daughter Ada Lovelace Launched the Digital Age

How Algorithms Create and Prevent Fake News

Journalism and the Contested Meaning of Algorithms

Information Revolution