Automate This How Algorithms Took Over Our Markets Our Jobs And The World By Christopher Steiner Published December 2013

Automate ThisHow Algorithms Took Over Our Markets, Our Jobs, and the WorldPortfolio Trade

The recent development of intelligent surveillance systems has captured the interest of both academic research labs and industry. Automated Multi-Camera Surveillance addresses monitoring of people and vehicles, and detection of threatening objects and events in a variety of scenarios. In this book, techniques for development of an automated multi-camera surveillance system are discussed and proposed. The state-of-the-art in the automated surveillance systems is reviewed as well. Detailed explanation of sub-components of surveillance systems are provided, and enhancements to each of these components are proposed. The authors identify important challenges that such a system must address, and propose solutions. Development of a specific surveillance system called “KNIGHT” is described, along with the authors’ experience using it. This book enables the reader to understand the mathematical models and algorithms underlying automated surveillance as well as the benefits and limitations of using such methods.

This book provides broad and comprehensive coverage of the entire EDA flow. EDA/VLSI practitioners and researchers in need of fluency in an "adjacent" field will find this an invaluable reference to the basic EDA concepts, principles, data structures, algorithms, and architectures for the design, verification, and test of VLSI circuits. Anyone who needs to learn the concepts, principles, data structures, algorithms, and architectures of the EDA flow will benefit from this book. Covers complete spectrum of the EDA flow, from ESL design modeling to logic/test synthesis, verification, physical design, and test - helps EDA newcomers to get "up-and-running" quickly Includes comprehensive coverage of EDA concepts, principles, data structures, algorithms, and architectures - helps all readers improve their VLSI design competence Contains latest advancements not yet available in other books, including Test compression, ESL design modeling, large-scale floorplanning, placement, routing, synthesis of clock and power/ground networks - helps readers to design/develop testable chips or products Includes industry best-practices wherever appropriate in most chapters - helps readers avoid costly mistakes

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 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.

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 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.

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.

Secure public and private cloud workloads with this comprehensive learning guide. Key Features Take your cloud security functions to the next level by automation Learn to automate your security functions on AWS and OpenStack Practical approach towards securing your workloads efficiently Book Description Security issues are still a major concern for all IT organizations. For many enterprises, the move to cloud computing has raised concerns for security, but when applications are architected with focus on security, cloud platforms can be made just as secure as on-premises platforms. Cloud instances can be kept secure by employing security automation that helps make your data meet your organization's security policy. This book starts with the basics of why cloud security is important and how automation can be the most effective way of controlling cloud security. You will then delve deeper into the AWS cloud environment and its security services by dealing with security functions such as Identity and Access Management and will also learn how these services can be automated. Moving forward, you will come across aspects such as cloud storage and data security, automating cloud deployments, and so on. Then, you'll work with OpenStack security modules and learn how private cloud security functions can be automated for better time- and cost-effectiveness. Toward the end of the book, you will gain an understanding of the security compliance requirements for your Cloud. By the end of this book, you will have hands-on experience of automating your cloud security and governance. What you will learn Define security for public and private cloud services Address the security concerns of your cloud Understand Identity and Access Management Get acquainted with cloud storage and network security Improve and optimize public and private cloud security Automate cloud security Understand the security compliance requirements of your cloud Who this book is for This book is targeted at DevOps Engineers, Security professionals, or any stakeholders responsible for securing cloud workloads. Prior experience with AWS or OpenStack will be an advantage.

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 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.

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

This book constitutes the refereed post-conference proceedings of the Second International Conference on Cyber Security and Computer Science, ICONCS 2020, held in Dhaka, Bangladesh, in February 2020. The 58 full papers were carefully reviewed and selected from 133 submissions. The papers detail new ideas, inventions, and application experiences to cyber security systems. They are organized in topical sections on optimization problems; image steganography and risk analysis on web applications; machine learning in disease diagnosis and monitoring; computer vision and image processing in health care; text and speech processing; machine learning in health care; blockchain applications; computer vision and image processing in health care; malware analysis; computer vision; future technology applications; computer networks; machine learning on imbalanced data; computer security; Bangla language processing.

Draws on interviews with Google's CEO and the heads of its newest businesses to trace the story of the company's ambitions and influence, covering such topics as its acquisition of YouTube and its role in reshaping business and culture.

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 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 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 ramifications for work and organizations worldwide.

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

Rely on this robust and thorough guide to build and maintain successful test automation. As the software industry shifts from traditional waterfall paradigms into more agile ones, test automation becomes a highly important tool that allows your development teams to deliver software at an ever-increasing pace without compromising quality. Even though it may seem trivial to automate the repetitive tester's work, using test automation efficiently and properly is not trivial. Many test automation endeavors end up in the "graveyard" of software projects. There are many things that affect the value of test automation, and also its costs. This book aims to cover all of these aspects in great detail so you can make decisions to create the best test automation solution that will not only help your test automation project to succeed, but also allow the entire software project to thrive. One of the most important details that affects the success of the test automation is how easy it is to maintain the automated tests. Complete Guide to Test Automation provides a detailed hands-on guide for writing highly maintainable test code. What You'll Learn Know the real value to be expected from test automation Discover the key traits that will make your test automation project succeed Be aware of the different considerations to take into account when planning automated tests vs. manual tests Determine who should implement the tests and the implications of this decision Architect the test project and fit it to the architecture of the tested application Design and implement highly reliable automated tests Begin gaining value from test automation earlier Integrate test automation into the business processes of the development team Leverage test automation to improve your organization's performance and quality, even without formal authority Understand how different types of automated tests will fit into your testing strategy, including unit testing, load and performance testing, visual testing, and more Who This Book Is For Those involved with software development such as test automation leads, QA managers, test automation developers, and development managers. Some parts of the book assume hands-on experience in writing code in an object-oriented language (mainly C# or Java), although most of the content is also relevant for nonprogrammers.

Automate data and model pipelines for faster machine learning applications Key Features Build automated modules for different machine learning components Understand each component of a machine learning pipeline in depth Learn to use different open source AutoML and feature engineering platforms Book Description AutoML is designed to automate parts of Machine Learning. Readily available AutoML tools are making data science practitioners' work easy and are received well in the advanced analytics community. Automated Machine Learning covers the necessary foundation needed to create automated machine learning modules and helps you get up to speed with them in the most practical way possible. In this book, you'll learn how to automate different tasks in the machine learning pipeline such as data preprocessing, feature selection, model training, model optimization, and much more. In addition to this, it demonstrates how you can use the available automation libraries, such as auto-sklearn and MLBox, and create and extend your own custom AutoML components for Machine Learning. By the end of this book, you will have a clearer understanding of the different aspects of automated Machine Learning, and you'll be able to incorporate automation tasks using practical datasets. You can leverage your learning from this book to implement Machine Learning in your projects and get a step closer to winning various machine learning competitions. What you will learn Understand the fundamentals of Automated Machine Learning systems Explore auto-sklearn and MLBox for AutoML tasks Automate your preprocessing methods along with feature transformation Enhance feature selection and generation using the Python stack Assemble individual components of ML into a complete AutoML framework Demystify hyperparameter tuning to optimize your ML models Dive into Machine Learning concepts such as neural networks and autoencoders Understand the information costs and trade-offs associated with AutoML Who this book is for If you're a budding data scientist, data analyst, or Machine Learning enthusiast and are new to the concept of automated machine learning, this book is ideal for you. You'll also find this book useful if you're an ML engineer or data professional interested in developing quick machine learning pipelines for your projects. Prior exposure to Python programming will help you get the best out of this book.

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.

R is an open source programming language and interactive programming environment that has become the software tool of choice in data analytics. Learning Base R provides an introduction to the language for those with and without prior programming experience. It introduces the key topics that you will need to begin analyzing data and programming in R. The focus here is on the R language rather than a particular application. Nearly 200 exercises allow you to assess your understanding of R.

“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 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 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.

An introductory, yet comprehensive, database textbook intended for use in undergraduate and graduate information systems database courses. This text also provides practical content to current and aspiring information systems, business data analysis, and decision support industry professionals. Database Systems: Introduction to Databases and Data Warehouses covers both analytical and operations database as knowledge of both is integral to being successful in today's business environment. It also provides a solid theoretical foundation and hands-on practice using an integrated web-based data-modeling suite.

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 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.

Discover how TPOT can be used to handle automation in machine learning and explore the different types of tasks that TPOT can automate Key Features Understand parallelism and how to achieve it in Python. Learn how to use neurons, layers, and activation functions and structure an artificial neural network. Tune TPOT models to ensure optimum performance on previously unseen data. Book Description The automation of machine learning tasks allows developers more time to focus on the usability and reactivity of the software powered by machine learning models. TPOT is a Python automated machine learning tool used for optimizing machine learning pipelines using genetic programming. Automating machine learning with TPOT enables individuals and companies to develop production-ready machine learning models cheaper and faster than with traditional methods. With this practical guide to AutoML, developers working with Python on machine learning tasks will be able to put their knowledge to work and become productive quickly. You'll adopt a hands-on approach to learning the implementation of AutoML and associated methodologies. Complete with step-by-step explanations of essential concepts, practical examples, and self-assessment questions, this book will show you how to build automated classification and regression models and compare their performance to custom-built models. As you advance, you'll also develop state-of-the-art models using only a couple of lines of code and see how those models outperform all of your previous models on the same datasets. By the end of this book, you'll have gained the confidence to implement AutoML techniques in your organization on a production level. What you will learn Get to grips with building automated machine learning models Build classification and regression models with impressive accuracy in a short time Develop neural network classifiers with AutoML techniques Compare AutoML models with traditional, manually developed models on the same datasets Create robust, production-ready models Evaluate automated classification models based on metrics such as accuracy, recall, precision, and f1-score Get hands-on with deployment using Flask-RESTful on localhost Who this book is for Data scientists, data analysts, and software developers who are new to machine learning and want to use it in their applications will find this book useful. This book is also for business users looking to automate business tasks with machine learning. Working knowledge of the Python programming language and beginner-level understanding of machine learning are necessary to get started.

Profiles technology as an evolving international system with predictable trends, counseling readers on how to prepare themselves and future generations by anticipating and steering their choices toward developing needs.

"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. 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, 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.

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

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 r sum s, 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

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

Novel Algorithms and Techniques in Telecommunications, Automation and Industrial Electronics includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Industrial Electronics, Technology and Automation, Telecommunications and Networking. Novel Algorithms and Techniques in Telecommunications, Automation and Industrial Electronics includes selected papers form the conference proceedings of the International Conference on Industrial Electronics, Technology and Automation (IETA 2007) and International Conference on Telecommunications and Networking (TeNe 07) which were part of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering (CISSE 2007).

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 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?

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 Boring Stuff with Python, 2nd Edition.

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

TESTIMONIALS “One of the most important books of our times!” – Bernard Marr “An essential reading for anybody who cares about the future of work” – Arianna Huffington "This insightful and practical guidebook is instrumental for success in the Fourth Industrial Revolution” – Klaus Schwab, founder of the World Economic Forum “An insightful exploration of Intelligent Automation”

– Dr. Kai-Fu Lee, Author of NYT Bestseller "AI Superpowers" “This field guide is essential reading” – Gartner “Masterful insight, this book is more relevant than ever” – HFS “This book needed to be written” – Forrester ABOUT THE BOOK This is the first book on Intelligent Automation (IA). Also called Hyperautomation, it is one of the most recent trends in the field of artificial intelligence. IA is a cutting-edge combination of methods and technologies, involving people, organizations, machine learning, low-code platforms, robotic process automation (RPA), and more. This book is for everyone – whether you are an experienced practitioner, new to the topic, or simply interested in what the future holds for enterprises, work, life, and society as a whole. Key content of the book: > What is Intelligent Automation (IA)? Why has the use of IA been expanding so rapidly? What are the benefits it unleashes for employees, companies, customers, and society? > How have leading organizations been able to harness the full potential of IA, at scale, and generate massive efficiency gains in the range of 20 to 60%? > How can IA save 10+ million lives per year, triple our global budget for education, eliminate hunger, help protect our planet, or increase the resilience of society to pandemics and crises? What you will get from this book: > Get the lessons learned from 100+ IA transformation successes (and failures) > Benefit from the largest publicly available library of 500+ IA use cases by industry and by business function > Gain access to insights garnered from 200+ IA industry experts Read more about this book: www.intelligentautomationbook.com and get it on Amazon: https://www.amazon.fr/dp/B08KFLY51Y WHY THIS BOOK? While many books have been published on AI, machine learning, or robotics, a comprehensive reference guidebook had never yet been written on the topic of IA. Also, it seemed essential to us to work towards establishing IA as a field, with its own frameworks, use cases, methods, and critical success factors. ABOUT THE AUTHORS Pascal Bornet is a recognized global expert, thought leader, and pioneer in the field of intelligent automation (IA). He founded and led the IA practices for Mckinsey & Company and Ernst & Young (EY), where he drove hundreds of IA transformations across industries. Bornet is a member of the Forbes Technology Council, and he was awarded Global Top Voice in Technology 2019. Ian Barkin is Chief Strategy & Marketing Officer at SYKES. He is a globally recognized thought leader and veteran in the IA space. Barkin co-founded Symphony Ventures, a pure-play IA consulting company providing cutting-edge services across all sectors. In 2018, the company was acquired for US$69 million by SYKES, a NASDAQ-listed global leader. Dr. Jochen Wirtz is Vice-Dean MBA Programmes at the National University of Singapore Business School, and Professor of Marketing. He is a well-known and highly acclaimed author with more than 20 books published, including "Services Marketing - People, Technology, Strategy". His research has been published in over 100 academic journal articles, and he received over 40 awards.

"It's easy to start writing code with Python: that's why the language is so immensely popular. However, Python has unique strengths, charms, and expressivity that can be hard to grasp at first -- as well as hidden pitfalls that can easily trip you up if you aren't aware of them. Effective Python will help you harness the full power of Python to write exceptionally robust, efficient, maintainable, and well-performing code. Utilizing the concise, scenario-driven style pioneered in Scott Meyers's best-selling Effective C++, Brett Slatkin brings together 53 Python best practices, tips, shortcuts, and realistic code examples from expert programmers. Through realistic examples, Slatkin uncovers little-known Python quirks, intricacies, and idioms that powerfully impact code behavior and performance. You'll learn how to choose the most efficient and effective way to accomplish key tasks when multiple options exist, and how to write code that's easier to understand, maintain, and improve. Drawing on his deep understanding of Python's capabilities, Slatkin offers practical advice for each major area of development with both Python 3.x and Python 2.x. Coverage includes: * Algorithms * Objects * Concurrency * Collaboration * Built-in modules * Production techniques * And more Each section contains specific, actionable guidelines organized into items, each with carefully worded advice supported by detailed technical arguments and illuminating examples. Using Effective Python, you can systematically improve all the Python code you write: not by blindly following rules or mimicking incomprehensible idioms, but by gaining a deep understanding of the technical reasons why they make sense."--[Source inconnue].

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.

A fascinating guided tour of the complex, fast-moving, and influential world of algorithms—what they are, why they’re such powerful predictors of human behavior, and where they’re headed next. Algorithms exert an extraordinary level of influence on our everyday lives - from dating websites and financial trading floors, through to online retailing and internet searches - Google's search algorithm is now a more closely guarded commercial secret than the recipe for Coca-Cola. Algorithms follow a series of instructions to solve a problem and will include a strategy to produce the best outcome possible from the options and permutations available. Used by scientists for many years and applied in a very specialized way they are now increasingly employed to process the vast amounts of data being generated, in investment banks, in the movie industry where they are used to predict success or failure at the box office and by social scientists and policy makers. What if everything in life could be reduced to a simple formula? What if numbers were able to tell us which partners we were best matched with – not just in terms of attractiveness, but for a long-term committed marriage? Or if they could say which films would be the biggest hits at the box office, and what changes could be made to those films to make them even more successful? Or even who is likely to commit certain crimes, and when? This may sound like the world of science fiction, but in fact it is just the tip of the iceberg in a world that is increasingly ruled by complex algorithms and neural networks. In The Formula, Luke Dormehl takes readers inside the world of numbers, asking how we came to believe in the all-conquering power of algorithms; introducing the mathematicians, artificial intelligence experts and Silicon Valley entrepreneurs who are shaping this brave new world, and ultimately asking how we survive in an era where numbers can sometimes seem to create as many problems as they solve.

A New York Times technology columnist's timely, counterintuitive, and highly practical guide to success in the age of A.I. and automation. The machines are here. After decades of sci-fi doomsaying and marketing hype, advanced A.I. and automation technologies have leapt out of research labs and Silicon Valley engineering departments and into the center of our lives. Robots once primarily threatened blue-collar manufacturing jobs, but today's machines are being trained to do the work of lawyers, doctors, investment bankers, and other white-collar jobs previously considered safe from automation's reach. The world's biggest corporations are racing to automate jobs, and some experts predict that A.I could put millions of people out of work. Meanwhile, runaway algorithms have already changed the news we see, the politicians we elect, and the ways we interact with each other. But all is not lost. With a little effort, we can become futureproof. In Futureproof: 9 Rules for Machine-Age Humans, New York Times technology columnist Kevin Roose lays out an optimistic vision of how people can thrive

in the machine age by rethinking their relationship with technology, and making themselves irreplaceably human. In nine pragmatic, accessible lessons, Roose draws on interviews with leading technologists, trips to the A.I. frontier, and centuries' worth of history to prepare readers to live, work, and thrive in the coming age of intelligent machines. He shares the secrets of people and organizations that have successfully survived technological change, including a nineteenth-century rope-maker and a Japanese auto worker, and explains how people, organizations, and communities can apply their lessons to safeguard their own futures. The lessons include: - Do work that is surprising, social, and scarce (the types of work machines can't do) - Break your phone addiction with the help of a rubber band - Work in an office - Treat A.I. like the office gorilla - Resist "hustle porn" and efficiency culture and do less, slower Roose's examination of the future rejects the conventional wisdom that in order to compete with machines, we have to become more like them--hyper-efficient, data-driven, code-writing workhorses. Instead, he says, we should let machines be machines, and focus on doing the kinds of creative, inspiring, and meaningful work only humans can do.

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 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.

A fascinating exploration of how insights from computer algorithms can be applied to our everyday lives, helping to solve common decision-making problems and illuminate the workings of the human mind All our lives are constrained by limited space and time, limits that give rise to a particular set of problems. What should we do, or leave undone, in a day or a lifetime? How much messiness should we accept? What balance of new activities and familiar favorites is the most fulfilling? These may seem like uniquely human quandaries, but they are not: computers, too, face the same constraints, so computer scientists have been grappling with their version of such issues for decades. And the solutions they've found have much to teach us. In a dazzlingly interdisciplinary work, acclaimed author Brian Christian and cognitive scientist Tom Griffiths show how the algorithms used by computers can also untangle very human questions. They explain how to have better hunches and when to leave things to chance, how to deal with overwhelming choices and how best to connect with others. From finding a spouse to finding a parking spot, from organizing one's inbox to understanding the workings of memory, Algorithms to Live By transforms the wisdom of computer science into strategies for human living.

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

Container terminals are constantly being challenged to adjust their throughput capacity to match fluctuating demand. Examining the optimization problems encountered in today’s container terminals, Vehicle Scheduling in Port Automation: Advanced Algorithms for Minimum Cost Flow Problems, Second Edition provides advanced algorithms for handling the scheduling of automated guided vehicles (AGVs) in ports. The research reported in this book represents a complete package that can help readers address the scheduling problems of AGVs in ports. The techniques presented are general and can easily be adapted to other areas. This book is ideal for port authorities and researchers, including specialists and graduate students in operation research. For specialists, it provides novel and efficient algorithms for network flow problems. For students, it supplies the most comprehensive survey of the field along with a rigorous formulation of the problems in port automation. This book is divided into two parts. Part one explores the various optimization problems in modern container terminals. The second part details advanced algorithms for the minimum cost flow (MCF) problem and for the scheduling problem of AGVs in ports. The book classifies optimization problems into five scheduling decisions. For each decision, it supplies an overview, formulates each of the decisions as constraint satisfaction and optimization problems, and then covers possible solutions, implementation, and performance. The book extends the dynamic network simplex algorithm, the fastest algorithm for solving the minimum cost flow problem, and develops four new advanced algorithms. In order to verify and validate the algorithms presented, the authors discuss the implementation of the algorithm to the scheduling problem of AGVs in container terminals.

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