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

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. Algorithms for Automating Open Source Intelligence (OSINT) presents information on the gathering of information and extraction of actionable intelligence from openly available sources, including news broadcasts, public repositories, and more recently, social media. As OSINT has applications in crime fighting, state-based intelligence, and social research, this book provides recent advances in text mining, web crawling, and other algorithms that have led to advances in methods that can largely automate this process. The book is beneficial to both practitioners and academic researchers, with discussions of the latest advances in applications, a coherent set of methods and processes for automating OSINT, and interdisciplinary perspectives on the key problems identified within each discipline. Drawing upon years of practical experience and

using numerous examples, editors Robert Layton, Paul Watters, and a distinguished list of contributors discuss Evidence Accumulation Strategies for OSINT, Named Entity Resolution in Social Media, Analyzing Social Media Campaigns for Group Size Estimation, Surveys and qualitative techniques in OSINT, and Geospatial reasoning of open data. Presents a coherent set of methods and processes for automating OSINT Focuses on algorithms and applications allowing the practitioner to get up and running quickly Includes fully developed case studies on the digital underground and predicting crime through OSINT Discusses the ethical considerations when using publicly available online data

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).

The author of the best-selling $20 Per Gallon traces the rise of computerized decision making to explore how it has become a pervasive aspect of life, revealing how cleverly designed bots are helping and hindering today's world while considering how algorithm technology will shape the near future.

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.

From the author of the New York Times bestseller The Inevitable— a sweeping vision of technology as a living force that can expand our individual potential In this provocative book, one of today's most respected thinkers turns the conversation about technology on its head by viewing technology as a natural system, an extension of biological evolution. By mapping the behavior of life, we paradoxically get a glimpse at where technology is headed-or "what it wants." Kevin Kelly offers a dozen trajectories in the coming decades for this near-living

system. And as we align ourselves with technology's agenda, we can capture its colossal potential. This visionary and optimistic book explores how technology gives our lives greater meaning and is a must-read for anyone curious about the future.

"We finally have the definitive treatise on PyTorch! It covers the basics and abstractions in great detail. I hope this book becomes your extended reference document." —Soumith Chintala, co-creator of PyTorch Key Features Written by PyTorch's creator and key contributors Develop deep learning models in a familiar Pythonic way Use PyTorch to build an image classifier for cancer detection Diagnose problems with your neural network and improve training with data augmentation Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Every other day we hear about new ways to put deep learning to good use: improved medical imaging, accurate credit card fraud detection, long range weather forecasting, and more. PyTorch puts these superpowers in your hands. Instantly familiar to anyone who knows Python data tools like NumPy and Scikit-learn, PyTorch simplifies deep learning without sacrificing advanced features. It's great for building quick models, and it scales smoothly from laptop to enterprise. Deep Learning with PyTorch teaches you to create deep learning and neural network

systems with PyTorch. This practical book gets you to work right away building a tumor image classifier from scratch. After covering the basics, you'll learn best practices for the entire deep learning pipeline, tackling advanced projects as your PyTorch skills become more sophisticated. All code samples are easy to explore in downloadable Jupyter notebooks. What You Will Learn Understanding deep learning data structures such as tensors and neural networks Best practices for the PyTorch Tensor API, loading data in Python, and visualizing results Implementing modules and loss functions Utilizing pretrained models from PyTorch Hub Methods for training networks with limited inputs Sifting through unreliable results to diagnose and fix problems in your neural network Improve your results with augmented data, better model architecture, and fine tuning This Book Is Written For For Python programmers with an interest in machine learning. No experience with PyTorch or other deep learning frameworks is required. About The Authors Eli Stevens has worked in Silicon Valley for the past 15 years as a software engineer, and the past 7 years as Chief Technical Officer of a startup making medical device software. Luca Antiga is co-founder and CEO of an AI engineering company located in Bergamo, Italy, and a regular contributor to PyTorch. Thomas Viehmann is a Machine Learning and PyTorch speciality trainer and consultant based in Munich, Germany and a PyTorch core developer.

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An accessible yet rigorous crash course on recursive programming using Python and JavaScript examples. Recursion, and recursive algorithms, have a reputation for being intimidating. They're seen as an advanced computer science topic often brought up in coding interviews. Moreover, coders often perceive the use of a recursive algorithm as a sophisticated solution that only true programmers can produce. But there's nothing magical about recursion. Its fearsome reputation is more a product of poor teaching than of the complexity of recursion itself. This book teaches the basics of recursion, exposes the ways it's often poorly taught,

and clarifies the fundamental principles behind all recursive algorithms. It is project-based, containing complete, runnable programs in both Python and JavaScript, and covers several common recursive algorithms for tasks like calculating factorials, producing numbers in the Fibonacci sequence, tree traversal, maze solving, binary search, quicksort and merge sort, Karatsuba multiplication, permutations and combinations, and solving the eight queens problem. The book also explains tail call optimization and memoization, concepts often employed to produce effective recursive algorithms, and the call stack, which is a critical part of how recursive functions work but is almost never explicitly pointed out in lessons on recursion. The last chapter, on fractals, culminates with examples of the beautiful fractal shapes recursion can produce. 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.

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.

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.

"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 Yang 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.

A thought-provoking and wide-ranging exploration of machine learning and the race to build computer intelligences as flexible as our own In the world's top research labs and universities, the race is on to invent the ultimate learning algorithm: one capable of discovering any knowledge from data, and doing anything we want, before we even ask. In The Master Algorithm, Pedro Domingos lifts the veil to give us a peek inside the learning machines that power Google, Amazon, and your smartphone. He assembles a blueprint for the future universal learner--the Master Algorithm--and discusses what it will mean for business, science, and society. If data-ism is today's philosophy, this book is its bible.

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.

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?

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

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

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 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
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.

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.

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. 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 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.

A look at how new technologies can be put to use in the creation of a more just society. Artificial Intelligence (AI) is not likely to make humans redundant. Nor will it create superintelligence anytime soon. But it will make huge advances in the next two decades, revolutionize medicine, entertainment, and transport, transform jobs and markets, and vastly increase the amount of information that governments and companies have about individuals. AI for Good leads off with

economist and best-selling author Daron Acemoglu, who argues that there are reasons to be concerned about these developments. AI research today pays too much attention to the technological hurtles ahead without enough attention to its disruptive effects on the fabric of society: displacing workers while failing to create new opportunities for them and threatening to undermine democratic governance itself. But the direction of AI development is not preordained. Acemoglu argues for its potential to create shared prosperity and bolster democratic freedoms. But directing it to that task will take great effort: It will require new funding and regulation, new norms and priorities for developers themselves, and regulations over new technologies and their applications. At the intersection of technology and economic justice, this book will bring together experts--economists, legal scholars, policy makers, and developers--to debate these challenges and consider what steps tech companies can do take to ensure the advancement of AI does not further diminish economic prospects of the most vulnerable groups of population.

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.

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.

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 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.
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.
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.

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.

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

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. "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. '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

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.

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

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