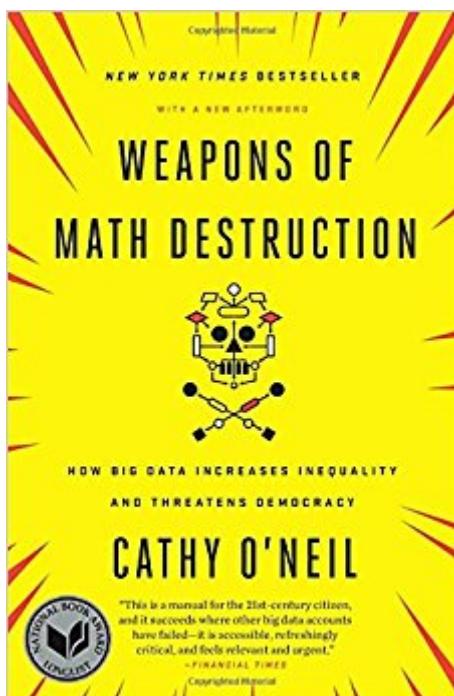The book was found

Weapons Of Math Destruction: How Big Data Increases Inequality And Threatens Democracy

Synopsis

Longlisted for the National Book AwardNew York Times BestsellerA former Wall Street quant sounds an alarm on the mathematical models that pervade modern lifeÂ â " and threaten to rip apart our social fabricWe live in the age of the algorithm. Increasingly, the decisions that affect our livesâ "where we go to school, whether we get a car loan, how much we pay for health insuranceâ "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 Oâ ™Neil reveals in this urgent and necessary book, the opposite is true. The models being used today are opaque, unregulated, and uncontestable, even when theyâ ™re wrong. Most troubling, they reinforce discrimination: If a poor student canâ ™t get a loan because a lending model deems him too risky (by virtue of his zip code), heâ ™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 â œtoxic cocktail for democracy.â • Welcome to the dark side of Big Data.Tracing the arc of a personâ ™s life, Oâ ™Neil exposes the black box models that shape our future, both as individuals and as a society. These â œweapons of math destructionâ • score teachers and students, sort rÃ©sumÃ©s, grant (or deny) loans, evaluate workers, target voters, set parole, and monitor our health.Oâ ™Neil calls on modelers to take more responsibility for their algorithms and on policy makers to regulate their use. But in the end, itâ ™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.â " Longlist for National Book Award (Non-Fiction)â " Goodreads, semi-finalist for the 2016 Goodreads Choice Awards (Science and Technology)â " Kirkus, Best Books of 2016â " New York Times, 100 Notable Books of 2016 (Non-Fiction)â " The Guardian, Best Books of 2016â " WBUR's "On Point," Best Books of 2016: Staff Picksâ " Boston Globe, Best Books of 2016, Non-Fiction

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Customer Reviews

A New York Times Book Review Notable Book of 2016A Boston Globe Best Book of 2016One of Wired's Required Reading Picks of 2016One of Fortune's Favorite Books of 2016A Kirkus ReviewsÂ Best Book of 2016A Chicago Public Library Best Book of 2016A Nature.com Best Book of 2016AnÂ On PointÂ Best Book of 2016New York Times Editor's ChoiceA Maclean's BestsellerWinner of the 2016 SLA-NY PrivCo Spotlight Awardâ œOâ ™Neilâ ™s book offers a frightening look at how algorithms are increasingly regulating peopleâ | Her knowledge of the power and risks of mathematical models, coupled with a gift for analogy, makes her one of the most valuable observers of the continuing weaponization of big dataâ | [She] does a masterly job explaining the pervasiveness and risks of the algorithms that regulate our lives.â •â "New York Times Book Review"Weapons of Math Destruction is the Big Data story Silicon Valley proponents won't tell.... [It] pithily exposes flaws in how information is used to assess everything from creditworthiness to policing tactics.... a thought-provoking read for anyone inclined to believe that data doesn't lie.â •â "Reutersâ œThis is a manual for the 21st-century citizen, and it succeeds where other big data accounts have failedâ "it is accessible, refreshingly critical and feels relevant and urgent.â •â "Financial Times"Insightful and disturbing."â "New York Review of Booksâ œWeapons of Math Destruction is an urgent critique ofâ | the rampant misuse of math in nearly every aspect of our lives.â •â "Boston Globeâ œA fascinating and deeply disturbing book.â •â "Yuval Noah Harari, author of Sapiens; The Guardianâ ™s Best Books of 2016â œIlluminatingâ | [Oâ ™Neil] makes a convincing case that this reliance on algorithms has gone too far.â •â "The Atlanticâ œA nuanced reminder that big data is only as good as the people wielding it.â •â "Wiredâ œIf youâ ™ve ever suspected there was something baleful about our deep trust in data, but lacked the mathematical skills to figure out exactly what it was, this is the book for you.â •â "Salonâ œOâ ™Neil is an ideal person to write this book. She is an academic mathematician turned Wall Street quant turned data scientist who has been involved in Occupy Wall Street and recentlyÂ started an algorithmic auditing company. She is one of the strongest voices speaking out for limiting the ways we allow algorithms to influence our livesâ |Â WhileÂ Weapons of

Math Destruction is full of hard truths and grim statistics, it is also accessible and even entertaining. O'Neil's writing is direct and easy to read—"I devoured it in an afternoon."—"Scientific American"Readable and engaging—succinct and cogent—Weapons of Math Destruction is The Jungle of our age—[It] should be required reading for all data scientists and for any organizational decision-maker convinced that a mathematical model can replace human judgment."—"Mark Van Hollebeke, Data and Society: Points"Indispensable—Despite the technical complexity of its subject, Weapons of Math Destruction lucidly guides readers through these complex modeling systems—O'Neil's book is an excellent primer on the ethical and moral risks of Big Data and an algorithmically dependent world—For those curious about how Big Data can help them and their businesses, or how it has been reshaping the world around them, Weapons of Math Destruction is an essential starting place."—"National Post"Cathy O'Neil has seen Big Data from the inside, and the picture isn't pretty. Weapons of Math Destruction opens the curtain on algorithms that exploit people and distort the truth while posing as neutral mathematical tools. This book is wise, fierce, and desperately necessary."—"Jordan Ellenberg, University of Wisconsin-Madison, author of How Not To Be Wrong"O'Neil has become [a whistle-blower] for the world of Big Data—[in] her important new book—Her work makes particularly disturbing points about how being on the wrong side of an algorithmic decision can snowball in incredibly destructive ways."—"TIME"O'Neil's work is so important—[her] book is a vital crash-course in the specialized kind of statistical knowledge we all need to interrogate the systems around us and demand better."—"Boing Boing"Cathy O'Neil, a number theorist turned data scientist, delivers a simple but important message: Statistical models are everywhere, and they exert increasing power over many aspects of our daily lives—Weapons of Math Destruction provides a handy map to a few of the many areas of our lives over which invisible algorithms have gained some control. As the empire of big data continues to expand, Cathy O'Neil's reminder of the need for vigilance is welcome and necessary."—"American Prospect"An avowed math nerd, O'Neil has written an engaging description of the effect of crunched data on our lives."—"Hicklebee's, San Francisco Chronicle"By tracking how algorithms shape people's lives at every stage, O'Neil makes a compelling case that our bot overlords are using data to discriminate unfairly and foreclose democratic choices. If you work with data, or just produce reams of it online, this is a must-read."—"ArsTechnica"Lucid, alarming, and valuable—[O'Neil's] writing is crisp and precise as she aims her arguments to a lay audience. This makes for a remarkably page-turning read for a book about algorithms. Weapons of Math Destruction should be required reading for anybody whose life will be affected by Big Data,

which is to say: required reading for everyone. Itâ ™s a wake-up call â " a journalistic heir to The Jungle and Silent Spring. Like those books, it should change the course of American society.â •â "Aspen Times"[O'Neil's] propulsive study reveals many models that are currently 'micromanaging' the US economy as opaque and riddled with bias."â "Natureâ œYou donâ ™t need to be a nerd to appreciate the significance of [Oâ ™Neilâ ™s] messageâ | Weapons is a must-read for anyone who is working to combat economic and racial discrimination.â •â "Goop"Cathy Oâ ™Neilâ ™s book... is important and covers issues everyone should care about. Bonus points: itâ ™s accessible, compelling, andâ "something I wasnâ ™t expectingâ "really fun to read.â •â "Inside Higher Edâ œOften we donâ ™t even know where to look for those important algorithms, because by definition the most dangerous ones are also the most secretive. Thatâ ™s why the catalogue of case studies in Oâ ™Neilâ ™s book are so important; sheâ ™s telling us where to look.â •â "The Guardianâ œOâ ™Neil is passionate about exposing the harmful effects of Big Dataâ "driven mathematical models (what she calls WMDs), and sheâ ™s uniquely qualified for the taskâ | [She] makes a convincing case that many mathematical models today are engineered to benefit the powerful at the expense of the powerlessâ | [and] has written an entertaining and timely book that gives readers the tools to cut through the ideological fog obscuring the dangers of the Big Data revolution.â •â "In These Timesâ œIn this simultaneously illuminating and disturbing account, [Oâ ™Neil] describes the many ways in which widely used mathematic modelsâ "based on â ˆprejudice, misunderstanding, and biasâ ™â "tend to punish the poor and reward the richâ | She convincingly argues for both more responsible modeling and federal regulation. An unusually lucid and readable look at the daunting algorithms that govern so many aspects of our lives.â •â "Kirkus Reviews (starred) â œEven as a professional mathematician, I had no idea how insidious Big Data could be until I read Weapons of Math Destruction. Though terrifying, itâ ™s a surprisingly fun read: Oâ ™Neilâ ™s vision of a world run by algorithms is laced with dark humor and exasperationâ "like a modern-day Dr. Strangelove or Catch-22. It is eye-opening, disturbing, and deeply important.â • â "Steven Strogatz, Cornell University, author of The Joy of x â œThis taut and accessible volume, the stuff of technophobesâ ™ nightmares, explores the myriad ways in which largescale data modeling has made the world a less just and equal place. Oâ ™Neil speaks from a place of authority on the subjectâ | Unlike some other recent books on data collection, hers is not hysterical; she offers more of a chilly wake-up call as she walks readers through the ways the â ˆbig dataâ ™ industry has facilitated social ills such as skyrocketing college tuitions, policing based on racial profiling, and high unemployment rates in vulnerable communitiesâ | eerily prescient.â •â "Publishers Weekly"Well-written, entertaining and very valuable."â "Times Higher

Education"Not math heavy, but written in an exceedingly accessible, almost literary style; [O'Neil's] fascinating case studies of WMDs fit neatly into the genre of dystopian literature. There's a little Philip K. Dick, a little Orwell, a little Kafka in her portrait of powerful bureaucracies ceding control of the most intimate decisions of our lives to hyper-empowered computer models riddled with all of our unresolved, atavistic human biases."â ”Paris ReviewÂ â œThrough harrowing real-world examples and lively story-telling, Weapons of Math Destruction shines invaluable light on the invisible algorithms and complex mathematical models used by government and big business to undermine equality and increase private power. Combating secrecy with clarity and confusion with understanding, this book can help us change course before itâ ™s too late.â •Â â ”Astra Taylor, author of The Peopleâ ™s Platform: Taking Back Power and Culture in the Digital AgeÂ "Weapons of Math DestructionÂ is a fantastic, plainspoken call to arms. It acknowledges that models aren't going away: As a tool for identifying people in difficulty, they are amazing. But as a tool for punishing and disenfranchising, they're a nightmare.â •â ”Cory Doctorow, author of Little Brother and co-editor of Boing BoingÂ â œMany algorithms are slaves to the inequalities of power and prejudice. If you donâ ™t want these algorithms to become your masters, read Weapons of Math Destruction by Cathy Oâ ™Neil to deconstruct the latest growing tyranny of an arrogant establishment.â •â ”Ralph Nader, author of Unsafe at Any SpeedÂ â œIn this fascinating account, Cathy O'Neil leverages her expertise in mathematics and her passion for social justice to poke holes in the triumphant narrative of Big Data. She makes a compelling case that math is being used to squeeze marginalized segments of society and magnify inequities. Her analysis is superb, her writing is enticing, and her findings are unsettling.â •â ”danah boyd, founder of Data & Society and author of Itâ ™s ComplicatedÂ Â "From getting a job to finding a spouse, predictive algorithms are silently shaping and controlling our destinies. Cathy O'Neil takes us on a journey of outrage and wonder, with prose that makes you feel like it's just a conversation. But itâ ™s an important one. We need to reckon with technology.â •â ”Linda Tirado, author of Hand to Mouth: Living in Bootstrap Americaâ œNext time you hear someone gushing uncritically about the wonders of Big Data, show them Weapons of Math Destruction. Itâ ™ll be salutary.â •â ”Felix Salmon, Fusion

Cathy O'Neil is a data scientist and author of the blog mathbabe.org. She earned a Ph.D. in mathematics from Harvard and taught at Barnard College before moving to the private sector, where she worked for the hedge fund D. E. Shaw. She then worked as a data scientist at various start-ups, building models that predict peopleâ ™s purchases and clicks. Oâ ™Neil started the Lede Program in Data Journalism at Columbia and is the author of Doing Data Science.Â She is currently

a columnist for Bloomberg View.

So here you are on 's web page, reading about Cathy O'Neil's new book, Weapons of Math Destruction. hopes you buy the book (and so do I, it's great!). But also hopes it can sell you some other books while you're here. That's why, in a prominent place on the page, you see a section entitled:Customers Who Bought This Item Also BoughtThis section is 's way of using what it knows -- which book you're looking at, and sales data collected across all its customers -- to recommend other books that you might be interested in. It's a very simple, and successful, example of a predictive model: data goes in, some computation happens, a prediction comes out. What makes this a good model? Here are a few things:1. It uses relevant input data.The goal is to get people to buy books, and the input to the model is what books people buy. You can't expect to get much more relevant than that.2. It's transparent. You know exactly why the site is showing you these particular books, and if the system recommends a book you didn't expect, you have a pretty good idea why. That means you can make an informed decision about whether or not to trust the recommendation.3. There's a clear measure of success and an embedded feedback mechanism. wants to sell books. The model succeeds if people click on the books they're shown, and, ultimately, if they buy more books, both of which are easy to measure. If clicks on or sales of related items go down, will know, and can investigate and adjust the model accordingly.Weapons of Math Destruction reviews, in an accessible, non-technical way, what makes models effective -- or not. The emphasis, as you might guess from the title, is on models with problems. The book highlights many important ideas; here are just a few:1. Models are more than just math. Take a look at 's model above: while there are calculations (simple ones) embedded, it's people who decide what data to use, how to use it, and how to measure success. Math is not a final arbiter, but a tool to express, in a scalable (i.e., computable) way, the values that people explicitly decide to emphasize. Cathy says that "models are opinions expressed in mathematics" (or computer code). She highlights that when we evaluate teachers based on students' test scores, or assess someone's insurability as a driver based on their credit record, we are expressing opinions: that a successful teacher should boost test scores, or that responsible bill-payers are more likely to be responsible drivers.2. Replacing what you really care about with what you can easily get your hands on can get you in trouble. In 's recommendation model, we want to predict book sales, and we can use book sales as inputs; that's a good thing. But what if you can't directly measure what you're interested in? In the early 1980's, the magazine US News wanted to report on college quality. Unable to measure quality directly, the magazine built a model based on proxies, primarily outward markers of success, like

selectivity and alumni giving. Predictably, college administrators, eager to boost their ratings, focused on these markers rather than on education quality itself. For example, to boost selectivity, they encouraged more students, even unqualified ones, to apply. This is an example of gaming the model.3. Historical data is stuck in the past. Typically, predictive models use past history to predict future behavior. This can be problematic when part of the intention of the model is to break with the past. To take a very simple example, imagine that Cathy is about to publish a sequel to Weapons of Math Destruction. If uses only purchase data, the Customers Who Bought This Also Bought list would completely miss the connection between the original and the sequel. This means that if we don't want the future to look just like the past, our models need to use more than just history as inputs. A chapter about predictive models in hiring is largely devoted to this idea. A company may think that its past, subjective hiring system overlooks qualified candidates, but if it replaces the HR department with a model that sifts through resumes based only on the records of past hires, it may just be codifying (pun intended) past practice. A related idea is that, in this case, rather than adding objectivity, the model becomes a shield that hides discrimination. This takes us back to Models are more than just math and also leads to the next point:4. Transparency matters! If a book you didn't expect shows up on The Customers Who Bought This Also Bought list, it's pretty easy for to check if it really belongs there. The model is pretty easy to understand and audit, which builds confidence and also decreases the likelihood that it gets used to obfuscate. An example of a very different story is the value added model for teachers, which evaluates teachers through their students' standardized test scores. Among its other drawbacks, this model is especially opaque in practice, both because of its complexity and because many implementations are built by outsiders. Models need to be openly assessed for effectiveness, and when teachers receive bad scores without knowing why, or when a single teacher's score fluctuates dramatically from year to year without explanation, it's hard to have any faith in the process.5. Models don't just measure reality, but sometimes amplify it, or create their own. Put another way, models of human behavior create feedback loops, often becoming self-fulfilling prophecies. There are many examples of this in the book, especially focusing on how models can amplify economic inequality. To take one example, a company in the center of town might notice that workers with longer commutes tend to turn over more frequently, and adjust its hiring model to focus on job candidates who can afford to live in town. This makes it easier for wealthier candidates to find jobs than poorer ones, and perpetuates a cycle of inequality. There are many other examples: predictive policing, prison sentences based on recidivism, e-scores for credit. Cathy talks about a trade-off between efficiency and fairness, and, as you can again guess from the title, argues for fairness as an explicit value in modeling.Weapons of

Math Destruction is not a math book, and it is not investigative journalism. It is short -- you can read it in an afternoon -- and it doesn't have time or space for either detailed data analysis (there are no formulas or graphs) or complete histories of the models she considers. Instead, Cathy sketches out the models quickly, perhaps with an individual anecdote or two thrown in, so she can get to the main point -- getting people, especially non-technical people, used to questioning models. As more and more aspects of our lives fall under the purview of automated data analysis, that's a hugely important undertaking.

I struggled with the star rating for this book. There are certainly aspects of the work that merit five stars. And it is VERY thought-provoking, like a good book should be. But there are flaws, significant ones, with the biggest flaw being a glaring over-simplification of many of the systems that O'Neil decries in the book. I don't know if O'Neil has personally ever had to take a psychology test to get a job, worked under the Kronos scheduling system, lived in a neighborhood with increased police presence due to crime rates, been victimized by insurance rates adjusted to zip codes, and endured corporate wellness programs. But all of those things have been a part of my life for years, and even I have to admit the many positive aspects of some of these systems. A few examples:--Kronos. Despised by the rank and file of companies that I've worked for, Kronos software contains many aspects and automates things that previously were done by people, mostly managers. I hated it, but I have to admit overall it made things more fair. Why? Well, say you have a workplace policy that mandates chronically-late employees be written up for tardiness and eventually fired if they don't shape up. What tended to happen at multiple companies I worked for was that managers would look the other way when their buddies were tardy, and write up people they didn't like. Kronos changed that, because the system automatically generated write-ups for any employee that clocked in late too many times. Kronos has no buddies. Popular, habitually-late people suffered, but it was more "fair" in the true sense of the word. Some systems, like Kronos, have both aspects that level the playing field and aspects (like increased scheduling "efficiency") that can victimize workers. O'Neil tends to harp on the negative only, and if you have not personally seen both sides of system, you might not realize there was another side at all.--Increased police presence in high-crime areas. This one really grated me the wrong way. O'Neil positions this as something that victimizes the poor. Well I have been poor, or at least this country's version of it, and I have lived in very high crime areas where if you didn't shut your window at night chances were good you would hear a murder. And believe me when I say I was DEEPLY grateful for the increased police presence. But then, I wasn't committing crimes. Now I live in a very wealthy neighborhood (though I am not wealthy)

where I have not seen a single police car drive down my street in the past four months. O'Neil argues that many crimes, like drug use by affluent college students, go unpunished because the police are busy in the poorer neighborhoods. I agree, but police resources are limited and for mercy's sake they should be sent where people are being killed, not where a college student is passed out in his living room. My current neighbors many be committing as many crimes as O'Neil implies, but I'm not terrified to walk down the street, so I don't mind the lack of police presence. I know officers have to go deal with the more life-threatening stuff, and I am grateful to them. It all depends on your perspective.--Corporate Wellness programs. These programs have never done anything for me except shower me with gift cards and educate me on behavioral sleep therapy. I love them. But, again, perspective. I am not overweight, I love to work out, and I eat healthy. The programs were a source of income for me and my family when we needed it most. I just would have liked acknowledgement that wellness programs really do have benefits for some people, instead of a chapter painting them as some sort of 1984-style nightmare where we are all forced to be thin. It's more complicated than that.--And the best for last: The psychology tests. Those things are pretty bad. Despite winning multiple Employee and Student of the Year awards in my life, I can't pass those tests. Not to save my life. I didn't think much of it, until I heard about another star employee how couldn't pass them either. Then I met a third star employee (and I am talking about an employee who won two JD Power Awards in two years) who couldn't pass them. Why? Picture holding a hundred quarters in your hands and then throwing them at a wall. Some will go off to one side and some to another, but most will probably cluster in the middle. Those tests keep the quarters in the middle, weeding out people who aren't typical. Sometimes that's good (deadbeats) sometimes that's bad (talented employees that think different). Here O'Neil misses an opportunity to convince owners of companies that the tests can cost them highly desirable employees. Offering real, concrete ideas of how the tests could be improved to benefit both workers and company owners would have been a harder book to write, but a much more useful one.A lot of the ominous implications made in the book have to do with what MIGHT happen in the future, if certain systems become more common. O'Neil often uses blanket statements to imply that certain outcomes are inevitable, but that is far from true. Irritate enough people, and the systems change. Legal challenges are made and won. Some companies, eager to lure star workers, throw out some of the more punishing aspects of commonly-used systems (that happened at a company where I worked, where "life-style" scheduling that forbid clopening and gave you two days off in a row was used in conjunction with Kronos. Worked great, people loved it.). The biggest weapon against abuse is, as O'Neil repeatedly states, transparency. Having been in the industry that creates these algorithms,

she is in a unique position to expose the finer details of how they work. But the book is short on the kind of details I personally crave and long on blanket statements and generalizations, the same kind of generalizations she denounces companies for making. Not all automated systems victimize the poor, not even the ones spotlighted in this book. I know because I lived them and I was poor.I hovered on the edge of a four star rating for this book, until a chance conversation with a Japanese woman a couple days ago. Her grandmother had lost most of her possessions and land after World War II because of land redistribution. My friend was not complaining, she thought the reforms overall a good thing, though her family had lost a lot from it. "Something may benefit 99 people of of 100," she told me,"but there's always that one person...". Exactly. There's always that one person. These systems that have come to permeate our culture need to be tweaked to minimize injustice. Unlawful algorithms need to be outlawed. Bad ideas need to be replaced with good ones. And Cathy O'Neil does discuss this, especially in the conclusion, but for me the focus of the book wasn't on target. It was too slanted against systems I have seen both harm AND help. It over-simplified issues, at least for me. It's a mess out there, and solutions that work for everyone wickedly hard to come by.Because there's always that one person.GRADE: B-Interesting side-note: In Greek Mythology, "Kronos" is the name of the Titan who devoured his own children. My co-workers always found that hilarious.

A powerful description, very well articulated by someone with the education and real-world experience to do so with credibility. For those easily accepting of statements in the media -- esp. social media -- all would benefit by reading this most appropriate piece.

I am sympathetic to the main thrust of this book, and wanted to like it, but it is just too lightweight.

This book is an important read for anyone in the business world. As a programmer with a moderate understanding of statistics I've seen companies put together statistically based "optimizing" algorithms with little or no thought given to the moral aspects of those algorithms. As Dr. O'Neil points out in this book, most of these algorithms are too small in scope to do serious damage. But one never really knows when some small project might take off and become a true "weapon of math destruction". I look at this book as a collection of examples of how such algorithms can go astray. Software developers would create better products if they learn about these examples and incorporate the lessons learned into each new project they tackle. At the end of the day you'll create better software if you understand the lessons presented in this book.

Great read! I think it is important for anyone who is either A) working as a data scientist/analyst in any capacity or B) interested in how data effects your every day life, from Facebook to Marketing to Banking, to read. Finished it in 3 days. Though it is talking about statistics, it explains its use rather then econometric models. As such, even though with know background can easily digest.

Amazing book and research. Filled with little-known boobytraps everyone should be aware of.

Just as described. Good buy.

Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy Data Analytics: What Every Business Must Know About Big Data And Data Science (Data Analytics for Business, Predictive Analysis, Big Data Book 1) Big Data For Business: Your Comprehensive Guide to Understand Data Science, Data Analytics and Data Mining to Boost More Growth and Improve Business - Data Analytics Book, Series 2 Data Analytics: Applicable Data Analysis to Advance Any Business Using the Power of Data Driven Analytics (Big Data Analytics, Data Science, Business Intelligence Book 6) Analytics: Data Science, Data Analysis and Predictive Analytics for Business (Algorithms, Business Intelligence, Statistical Analysis, Decision Analysis, Business Analytics, Data Mining, Big Data) Mini Weapons of Mass Destruction: Build and Master Ninja Weapons Mini Weapons of Mass Destruction 3: Build Siege Weapons of the Dark Ages Homemade Survival Weapons: The Ultimate Guide To Survival Weapons, Tools And Skills - Discover Amazing Lessons To Creating Effective Weapons For Survival And Self-Defense! Toxic Inequality: How America’s Wealth Gap Destroys Mobility, Deepens the Racial Divide, and Threatens Our Future The Crisis of the Middle-Class Constitution: Why Economic Inequality Threatens Our Republic Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data Analytics: Business Intelligence, Algorithms and Statistical Analysis (Predictive Analytics, Data Visualization, Data Analytics, Business Analytics, Decision Analysis, Big Data, Statistical Analysis) Big Data in Practice: How 45 Successful Companies Used Big Data Analytics to Deliver Extraordinary Results How to Build a Nuclear Bomb: And Other Weapons of Mass Destruction (Nation Books) Data Analytics and Python Programming: 2 Bundle Manuscript: Beginners Guide to Learn Data Analytics, Predictive Analytics and Data Science with Python Programming Data Analytics For Beginners: Your Ultimate Guide To Learn and Master Data Analysis. Get Your Business Intelligence Right â " Accelerate Growth and Close More Sales (Data Analytics Book

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