Once Upon An Algorithm How Stories Explain Computing

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Data Structures and Algorithms in Java Michael T. Goodrich 2014-01-28 The design and analysis of efficient

data structures has long been recognized as a key component of the Computer Science curriculum. Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, net.datastructures. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.

Algorithmic Thinking Daniel Zingaro 2020-12-15 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?

Once Upon a Time in the Academic Library Maria Barefoot 2022-02-21 It could be argued that to tell stories is to be human. Storytelling evolved alongside us to provide entertainment via literature, plays, and visual arts. It helps shape society through parables, moral tales, and religion. Storytelling plays a role in business, law, medicine, and education in modern society. Academic librarians can apply storytelling in the same way that teachers, entertainers, lawyers, and businesspeople have done for centuries, as education within information literacy instruction and as communication in the areas of

reference, outreach, management, assessment, and more. Once Upon a Time in the Academic Library explores applications of storytelling across academic librarianship in three sections: The Information Literacy Classroom The Stacks Physical and Virtual Library Spaces A thorough introduction discusses the historical and theoretical roots of storytelling, as well as the mechanics and social justice applications. Chapter authors demonstrate using storytelling to share diverse viewpoints that connect with their users, and each chapter contains practical examples of how storytelling can be used within the library and cultural considerations for the audience. The first section focuses on storytelling as a pedagogical tool; the others include examples of how storytelling has been used as a communication method in sharing and developing collections, at service points, and in online spaces. Once Upon a Time in the Academic Library can provide ideas and inspiration for incorporating storytelling into your teaching and communication, and inspire you to invent new ways of using it in your work.

Algorithm Design Jon Kleinberg 2012-02-28 This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Algorithm Design introduces algorithms by looking at the real-world problems that motivate them. The book teaches students a range of design and analysis techniques for problems that arise in

computing applications. The text encourages an understanding of the algorithm design process and an appreciation of the role of algorithms in the broader field of computer science. August 6, 2009 Author, Jon Kleinberg, was recently cited in the New York Times for his statistical analysis research in the Internet age.

A Human's Guide to Machine Intelligence Kartik Hosanagar 2019-03-12 A Wharton professor and tech entrepreneur examines how algorithms and artificial intelligence are starting to run every aspect of our lives, and how we can shape the way they impact us Through the technology embedded in almost every major tech platform and every web-enabled device, algorithms and the artificial intelligence that underlies them make a staggering number of everyday decisions for us, from what products we buy, to where we decide to eat, to how we consume our news, to whom we date, and how we find a job. We've even delegated life-and-death decisions to algorithms--decisions once made by doctors, pilots, and judges. In his new book, Kartik Hosanagar surveys the brave new world of algorithmic decision-making and reveals the potentially dangerous biases they can give rise to as they increasingly run our lives. He makes the compelling case that we need to arm ourselves with a better, deeper, more nuanced understanding of the phenomenon of algorithmic thinking. And he gives us a route in, pointing out that algorithms often think a lot like their creators--that is, like you and

me. Hosanagar draws on his experiences designing algorithms professionally--as well as on history, computer science, and psychology--to explore how algorithms work and why they occasionally go rogue, what drives our trust in them, and the many ramifications of algorithmic decision-making. He examines episodes like Microsoft's chatbot Tay, which was designed to converse on social media like a teenage girl, but instead turned sexist and racist; the fatal accidents of self-driving cars; and even our own common, and often frustrating, experiences on services like Netflix and Amazon. A Human's Guide to Machine Intelligence is an entertaining and provocative look at one of the most important developments of our time and a practical user's guide to this first wave of practical artificial intelligence.

Computer Science Distilled Wladston Ferreira Filho 2017-01-17 A foolproof walkthrough of must-know computer science concepts. A fast guide for those who don't need the academic formality, it goes straight to what differentiates pros from amateurs. First introducing discrete mathematics, then exposing the most common algorithm and data structure design elements, and finally the working principles of computers and programming languages, the book is indicated to all programmers.

Python and Algorithmic Thinking for the Complete Beginner Aristides Bouras 2015-08-23 This book is for anyone who wants to learn computer programming and knows absolutely

nothing about it. Of course, if you are wondering whether this book is going to teach you how to create amazing applets or incredible desktop or mobile applications, the answer is "no"-that is a job for other books. So many books out there can teach you those skills in Python, C#, or Java. Many of them even claim that they can teach you in 24 hours! Don't laugh! They probably can do that, but all of them take one thing for granted-that the reader knows some basics about computer programming. None of those books, unfortunately, bothers to teach you the first thing that a novice programmer needs to learn, which is "Algorithmic Thinking." Algorithmic Thinking involves more than just learning code. It is a problem solving process that involves learning how to code. With over 700 pages, and containing more than 300 solved and 400 unsolved exercises, over 450 true/false, 150 multiple choice, and 180 review questions (the solutions and the answers to which can be found on the Internet), this book is ideal for students, teachers, professors, novices or average programmers, or for anyone who wants to start learning or teaching computer programming using the proper conventions and techniques.

Programming Pearls Jon Louis Bentley 2000 A guide to practical programming techniques and design principles, with information on such topics as testing, debugging and timing, set representations, and string problems.

AI 2041 Kai-Fu Lee 2021-09-14 How will artificial intelligence change our world within twenty years? A WALL STREET JOURNAL, WASHINGTON POST, AND

FINANCIAL TIMES BEST BOOK OF THE YEAR • “This inspired collaboration between a pioneering technologist and a visionary writer of science fiction offers bold and urgent insights.”—Yann LeCun, winner of the Turing Award; chief AI scientist, Facebook “Amazingly entertaining . . . Lee and Chen take us on an immersive trip through the future. . . . Eye-opening.”—Mark Cuban AI will be the defining development of the twenty-first century. Within two decades, aspects of daily human life will be unrecognizable. AI will generate unprecedented wealth, revolutionize medicine and education through human-machine symbiosis, and create brand-new forms of communication and entertainment. In liberating us from routine work, however, AI will also challenge the organizing principles of our economic and social order. Meanwhile, AI will bring new risks in the form of autonomous weapons and smart technology that inherits human bias. AI is at a tipping point, and people need to wake up—both to AI’s radiant pathways and its existential perils for life as we know it. In this provocative, utterly original work, Kai-Fu Lee, the former president of Google China and bestselling author of AI Superpowers, teams up with celebrated novelist Chen Qiufan to imagine our world in 2041 and how it will be shaped by AI. In ten gripping short stories, they introduce readers to an array of eye-opening 2041 settings, such as: • In San Francisco, the “job reallocation” industry emerges as deep learning AI causes widespread job displacement •

In Tokyo, a music fan is swept up in an immersive form of celebrity worship based on virtual reality and mixed reality • In Mumbai, a teenage girl rebels when AI's crunching of big data gets in the way of romance • In Seoul, virtual companions with perfected natural language processing (NLP) skills offer orphaned twins new ways to connect • In Munich, a rogue scientist draws on quantum computing, computer vision and other AI technologies in a revenge plot that imperils the world By gazing toward a not-so-distant horizon, AI 2041 offers urgent insights into our collective future—while reminding readers that, ultimately, humankind remains the author of its destiny.

Weapons of Math Destruction Cathy O'Neil 2016-09-06 NEW YORK TIMES BESTSELLER • A former Wall Street quant sounds the alarm on Big Data and the mathematical models that threaten to rip apart our social fabric—with a new afterword "A manual for the twenty-first-century citizen . . . relevant and urgent."—Financial Times NATIONAL BOOK AWARD LONGLIST • NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The New York Times Book Review • The Boston Globe • Wired • Fortune • Kirkus Reviews • The Guardian • Nature • On Point We live in the age of the algorithm. Increasingly, the decisions that affect our lives—where we go to school, whether we can get a job or a loan, how much we pay for health insurance—are being made not by humans, but by machines. In theory, this should lead to greater fairness: Everyone is judged according to the same rules. But as mathematician and

data scientist Cathy O'Neil reveals, the mathematical models being used today are unregulated and uncontestable, even when they're wrong. Most troubling, they reinforce discrimination—propping up the lucky, punishing the downtrodden, and undermining our democracy in the process. Welcome to the dark side of Big Data.

Once Upon a Time . . . A Treasury of Classic Fairy Tale Illustrations Jeff A. Menges 2013-02-19 This collection gathers breathtaking art from early editions of "Sleeping Beauty," "Cinderella," and other classics. 180 elegant images — most in color — include works by Rackham, Dore, Dulac, Nielsen, and others.

Bad Choices Ali Almossawi 2017-04-04 A relatable, interactive, and funny exploration of algorithms, those essential building blocks of computer science—and of everyday life—from the author of the wildly popular Bad Arguments Algorithms—processes that are made up of unambiguous steps and do something useful—make up the very foundations of computer science. But they also inform our choices in approaching everyday tasks, from managing a pile of clothes fresh out of the dryer to deciding what music to listen to. With Bad Choices, Ali Almossawi presents twelve scenes from everyday life that help demonstrate and demystify the fundamental algorithms that drive computer science, bringing these seemingly elusive concepts into the understandable realms of the everyday. Readers will discover how: • Matching socks can teach you about search and hash tables • Planning

trips to the store can demonstrate the value of stacks • Deciding what music to listen to shows why link analysis is all-important • Crafting a succinct Tweet draws on ideas from compression • Making your way through a grocery list helps explain priority queues and traversing graphs • And more As you better understand algorithms, you'll also discover what makes a method faster and more efficient, helping you become a more nimble, creative problem-solver, ready to face new challenges. Bad Choices will open the world of algorithms to all readers, making this a perennial go-to for fans of quirky, accessible science books.

Algorithms of Oppression Safiya Umoja Noble 2018-02-20 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.

Algorithmic Puzzles Anany Levitin 2011-10-14 Algorithmic puzzles are puzzles involving well-defined procedures for solving problems. This book will provide an enjoyable and accessible introduction to algorithmic puzzles that will develop the reader's algorithmic thinking. The first part of this book is a tutorial on algorithm design strategies and analysis techniques. Algorithm design strategies — exhaustive search, backtracking, divide-and-conquer and a few others — are general approaches to designing step-by-step instructions for solving problems. Analysis techniques are methods for investigating such

procedures to answer questions about the ultimate result of the procedure or how many steps are executed before the procedure stops. The discussion is an elementary level, with puzzle examples, and requires neither programming nor mathematics beyond a secondary school level. Thus, the tutorial provides a gentle and entertaining introduction to main ideas in high-level algorithmic problem solving. The second and main part of the book contains 150 puzzles, from centuries-old classics to newcomers often asked during job interviews at computing, engineering, and financial companies. The puzzles are divided into three groups by their difficulty levels. The first fifty puzzles in the Easier Puzzles section require only middle school mathematics. The sixty puzzle of average difficulty and forty harder puzzles require just high school mathematics plus a few topics such as binary numbers and simple recurrences, which are reviewed in the tutorial. All the puzzles are provided with hints, detailed solutions, and brief comments. The comments deal with the puzzle origins and design or analysis techniques used in the solution. The book should be of interest to puzzle lovers, students and teachers of algorithm courses, and persons expecting to be given puzzles during job interviews.

What Algorithms Want Ed Finn 2017-03-10 The gap between theoretical ideas and messy reality, as seen in Neal Stephenson, Adam Smith, and Star Trek. We depend on—we believe in—algorithms to help us get a ride, choose which book to buy,

execute a mathematical proof. It's as if we think of code as a magic spell, an incantation to reveal what we need to know and even what we want. Humans have always believed that certain invocations—the marriage vow, the shaman's curse—do not merely describe the world but make it. Computation casts a cultural shadow that is shaped by this long tradition of magical thinking. In this book, Ed Finn considers how the algorithm—in practical terms, "a method for solving a problem"—has its roots not only in mathematical logic but also in cybernetics, philosophy, and magical thinking. Finn argues that the algorithm deploys concepts from the idealized space of computation in a messy reality, with unpredictable and sometimes fascinating results. Drawing on sources that range from Neal Stephenson's Snow Crash to Diderot's Encyclopédie, from Adam Smith to the Star Trek computer, Finn explores the gap between theoretical ideas and pragmatic instructions. He examines the development of intelligent assistants like Siri, the rise of algorithmic aesthetics at Netflix, Ian Bogost's satiric Facebook game Cow Clicker, and the revolutionary economics of Bitcoin. He describes Google's goal of anticipating our questions, Uber's cartoon maps and black box accounting, and what Facebook tells us about programmable value, among other things. If we want to understand the gap between abstraction and messy reality, Finn argues, we need to build a model of "algorithmic reading" and scholarship that attends to process, spearheading

a new experimental humanities.
Interpretable Machine Learning Christoph Molnar 2019
The Worm at the Core Sheldon Solomon 2015-05-12 A transformative, fascinating theory—based on robust and groundbreaking experimental research—reveals how our unconscious fear of death powers almost everything we do, shining a light on the hidden motives that drive human behavior More than one hundred years ago, the American philosopher William James dubbed the knowledge that we must die "the worm at the core" of the human condition. In 1974, cultural anthropologist Ernest Becker won the Pulitzer Prize for his book The Denial of Death, arguing that the terror of death has a pervasive effect on human affairs. Now authors Sheldon Solomon, Jeff Greenberg, and Tom Pyszczynski clarify with wide-ranging evidence the many ways the worm at the core guides our thoughts and actions, from the great art we create to the devastating wars we wage. The Worm at the Core is the product of twenty-five years of in-depth research. Drawing from innovative experiments conducted around the globe, Solomon, Greenberg, and Pyszczynski show conclusively that the fear of death and the desire to transcend it inspire us to buy expensive cars, crave fame, put our health at risk, and disguise our animal nature. The fear of death can also prompt judges to dole out harsher punishments, make children react negatively to people different from themselves, and inflame intolerance and violence. But the worm at the core need not consume us.

Emerging from their research is a unique and compelling approach to these deeply existential issues: terror management theory. TMT proposes that human culture infuses our lives with order, stability, significance, and purpose, and these anchors enable us to function moment to moment without becoming overwhelmed by the knowledge of our ultimate fate. The authors immerse us in a new way of understanding human evolution, child development, history, religion, art, science, mental health, war, and politics in the twenty-first century. In so doing, they also reveal how we can better come to terms with death and learn to lead lives of courage, creativity, and compassion. Written in an accessible, jargon-free style, The Worm at the Core offers a compelling new paradigm for understanding the choices we make in life—and a pathway toward divesting ourselves of the cultural and personal illusions that keep us from accepting the end that awaits us all. Praise for The Worm at the Core “The idea that nearly all human individual and cultural activity is a response to death sounds far-fetched. But the evidence the authors present is compelling and does a great deal to address many otherwise intractable mysteries of human behaviour. This is an important, superbly readable and potentially life-changing book.”—The Guardian (U.K.) “A neat fusion of ideas borrowed from sociology, anthropology, existential philosophy and psychoanalysis.”—The Herald (U.K.) “Deep, important, and beautifully written, The Worm at the

Core describes a brilliant and utterly original program of scientific research on a force so powerful that it drives our lives."—Daniel Gilbert, Edgar Pierce Professor of Psychology, Harvard University, and author of Stumbling on Happiness "As psychology becomes increasingly trivial, devolving into the promotion of positive-thinking platitudes, The Worm at the Core bucks the trend. The authors present—and provide robust evidence for—a psychological thesis with disturbing personal as well as political implications."—John Horgan, author of The End of War and director of the Center for Science Writings, Stevens Institute of Technology *The CS Detective* Jeremy Kubica 2016-08-16 Meet Frank Runtime. Disgraced ex-detective. Hard-boiled private eye. Search expert. When a robbery hits police headquarters, it's up to Frank Runtime and his extensive search skills to catch the culprits. In this detective story, you'll learn how to use algorithmic tools to solve the case. Runtime scours smugglers' boats with binary search, tails spies with a search tree, escapes a prison with depth-first search, and picks locks with priority queues. Joined by know-it-all rookie Officer Notation and inept tag-along Socks, he follows a series of leads in a best-first search that unravels a deep conspiracy. Each chapter introduces a thrilling twist matched with a new algorithmic concept, ending with a technical recap. Perfect for computer science students and amateur sleuths alike, The CS Detective adds an entertaining

twist to learning algorithms. Follow Frank's mission and learn: —The algorithms behind best-first and depth-first search, iterative deepening, parallelizing, binary search, and more —Basic computational concepts like strings, arrays, stacks, and queues —How to adapt search algorithms to unusual data structures —The most efficient algorithms to use in a given situation, and when to apply common-sense heuristic methods

Once Upon an Algorithm Martin Erwig 2017-08-11 How Hansel and Gretel, Sherlock Holmes, the movie Groundhog Day, Harry Potter, and other familiar stories illustrate the concepts of computing. Picture a computer scientist, staring at a screen and clicking away frantically on a keyboard, hacking into a system, or perhaps developing an app. Now delete that picture. In Once Upon an Algorithm, Martin Erwig explains computation as something that takes place beyond electronic computers, and computer science as the study of systematic problem solving. Erwig points out that many daily activities involve problem solving. Getting up in the morning, for example: You get up, take a shower, get dressed, eat breakfast. This simple daily routine solves a recurring problem through a series of well-defined steps. In computer science, such a routine is called an algorithm. Erwig illustrates a series of concepts in computing with examples from daily life and familiar stories. Hansel and Gretel, for example, execute an algorithm to get home from the forest. The movie Groundhog Day

illustrates the problem of unsolvability; Sherlock Holmes manipulates data structures when solving a crime; the magic in Harry Potter's world is understood through types and abstraction; and Indiana Jones demonstrates the complexity of searching. Along the way, Erwig also discusses representations and different ways to organize data; “intractable” problems; language, syntax, and ambiguity; control structures, loops, and the halting problem; different forms of recursion; and rules for finding errors in algorithms. This engaging book explains computation accessibly and shows its relevance to daily life. Something to think about next time we execute the algorithm of getting up in the morning.

Computational Fairy Tales Jeremy Kubica 2012 Have you ever thought that computer science should include more dragons and wizards? Computational Fairy Tales introduces principles of computational thinking, illustrating high-level computer science concepts, the motivation behind them, and their application in a non-computer—fairy tale—domain. It's a quest that will take you from learning the basics of programming in a blacksmith's forge to fighting curses with recursion.Fifteen seers delivered the same prophecy, without so much as a single minstrel to lighten the mood: an unknown darkness threatens the kingdom. Suddenly, Princess Ann finds herself sent forth alone to save the kingdom. Leaving behind her home, family, and pet turtle Fido, Princess Ann must face goblin attacks, magical curses,

arrogant scholars, an unpleasant oracle, and rude Boolean waiters. Along the way she must build a war chest of computational knowledge to survive the coming challenge.
Once Upon an Algorithm Martin Erwig 2022-08-09 How Hansel and Gretel, Sherlock Holmes, the movie Groundhog Day, Harry Potter, and other familiar stories illustrate the concepts of computing. Picture a computer scientist, staring at a screen and clicking away frantically on a keyboard, hacking into a system, or perhaps developing an app. Now delete that picture. In Once Upon an Algorithm, Martin Erwig explains computation as something that takes place beyond electronic computers, and computer science as the study of systematic problem solving. Erwig points out that many daily activities involve problem solving. Getting up in the morning, for example: You get up, take a shower, get dressed, eat breakfast. This simple daily routine solves a recurring problem through a series of well-defined steps. In computer science, such a routine is called an algorithm. Erwig illustrates a series of concepts in computing with examples from daily life and familiar stories. Hansel and Gretel, for example, execute an algorithm to get home from the forest. The movie Groundhog Day illustrates the problem of unsolvability; Sherlock Holmes manipulates data structures when solving a crime; the magic in Harry Potter's world is understood through types and abstraction; and Indiana Jones demonstrates the complexity of searching. Along the way, Erwig also

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Nine Algorithms That Changed the Future John MacCormick 2020-09-15 Nine revolutionary algorithms that power our computers and smartphones Every day, we use our computers to perform remarkable feats. A simple web search picks out a handful of relevant needles from the world's biggest haystack. Uploading a photo to Facebook transmits millions of pieces of information over numerous error-prone network links, yet somehow a perfect copy of the photo arrives intact. Without even knowing it, we use public-key cryptography to transmit secret information like credit card numbers, and we use digital signatures to verify the identity of the websites we visit. How do our computers perform these tasks with such ease? John MacCormick answers this question in language anyone can understand, using vivid examples to explain the fundamental tricks behind nine computer algorithms that power our PCs, tablets, and smartphones.

Where the Crawdads Sing (Movie Tie-In) Delia Owens 2022-06-28 NOW A MAJOR MOTION PICTURE The #1 New York Times bestselling worldwide sensation

with more than 12 million copies sold, “a painfully beautiful first novel that is at once a murder mystery, a coming-of-age narrative and a celebration of nature” (The New York Times Book Review). For years, rumors of the “Marsh Girl” have haunted Barkley Cove, a quiet town on the North Carolina coast. So in late 1969, when handsome Chase Andrews is found dead, the locals immediately suspect Kya Clark, the so-called Marsh Girl. But Kya is not what they say. Sensitive and intelligent, she has survived for years alone in the marsh that she calls home, finding friends in the gulls and lessons in the sand. Then the time comes when she yearns to be touched and loved. When two young men from town become intrigued by her wild beauty, Kya opens herself to a new life—until the unthinkable happens. Where the Crawdads Sing is at once an exquisite ode to the natural world, a heartbreaking coming-of-age story, and a surprising tale of possible murder. Delia Owens reminds us that we are forever shaped by the children we once were, and that we are all subject to the beautiful and violent secrets that nature keeps.

Best Practices of Spell Design Jeremy Kubica 2013-01-21 "The Best Practices of Spell Design introduces practical aspects of software development that are often learned through painful experience. Through Marcus and Shelly's quest, the story encourages readers to think about how to write readable, well-tested and maintainable programs."--P. [4] of cover.

The Fear Index Robert Harris

2012-01-31 At the nexus of high finance and sophisticated computer programming, a terrifying future may be unfolding even now. Dr. Alex Hoffmann's name is carefully guarded from the general public, but within the secretive inner circles of the ultrarich he is a legend. He has developed a revolutionary form of artificial intelligence that predicts movements in the financial markets with uncanny accuracy. His hedge fund, based in Geneva, makes billions. But one morning before dawn, a sinister intruder breaches the elaborate security of his lakeside mansion, and so begins a waking nightmare of paranoia and violence as Hoffmann attempts, with increasing desperation, to discover who is trying to destroy him. Fiendishly smart and suspenseful, The Fear Index gives us a searing glimpse into an all-too-recognizable world of greed and panic. It is a novel that forces us to confront the question of what it means to be human—and it is Robert Harris's most spellbinding and audacious novel to date.

The Bestseller Code Jodie Archer 2016-09-20 "When a story captures the imagination of millions, that's magic. Can you qualify magic? Archer and Jockers just may have done so."—Sylvia Day, New York Times bestselling author Ask most people about massive success in the world of fiction, and you'll typically hear that it's a game of hazy crystal balls. The sales figures of E. L. James or Dan Brown seem to be freakish—random occurrences in an unknowable market. But what if there were an algorithm that could reveal a

secret DNA of bestsellers, regardless of their genre? What if it knew, just from analyzing the words alone, not just why genre writers like John Grisham and Danielle Steel belong on the lists, but also that authors such as Junot Diaz, Jodi Picoult, and Donna Tartt had telltale signs of success all over their pages? Thanks to Jodie Archer and Matthew Jockers, the algorithm exists, the code has been cracked, and the results bring fresh new insights into how fiction works and why we read. The Bestseller Code offers a new theory for why Fifty Shades of Grey sold so well. It sheds light on the current craze for dark heroines. It reveals which themes tend to sell best. And all with fascinating supporting data taken from a five-year study of twenty thousand novels. Then there is the hunt for "the one"—the paradigmatic example of bestselling writing according to a computer's analysis of thousands of points of data. The result is surprising, a bit ironic, and delightfully unorthodox. This book explains groundbreaking text-mining research in accessible terms and offers a new perspective on the New York Times bestseller list. It's a big-idea book about the relationship between creativity and technology that will be provocative to anyone interested in how analytics have already transformed the worlds of finance, medicine, and sports. But at heart it is a celebration of books for readers and writers—a compelling investigation into how successful writing works, and a fresh take on our intellectual and emotional response to stories.

Hello World Hannah Fry 2019-03-28 '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

Ten Arguments for Deleting Your Social Media Accounts Right Now Jaron Lanier 2018-05-29 "You might have trouble imagining life without your social media accounts, but virtual reality pioneer Jaron Lanier insists that we're better off without them. In Ten Arguments for Deleting Your Social Media Accounts Right Now, Lanier, who participates in no social media, offers powerful and personal reasons for all of us to leave these

dangerous online platforms"--

The Meaning of Proofs Gabriele Lolli 2022-09-27 Why mathematics is not merely formulaic: an argument that to write a mathematical proof is tantamount to inventing a story. In The Meaning of Proofs, mathematician Gabriele Lolli argues that to write a mathematical proof is tantamount to inventing a story. Lolli offers not instructions for how to write mathematical proofs, but a philosophical and poetic reflection on mathematical proofs as narrative. Mathematics, imprisoned within its symbols and images, Lolli writes, says nothing if its meaning is not narrated in a story. The minute mathematicians open their mouths to explain something—the meaning of x, how to find y—they are framing a narrative. Every proof is the story of an adventure, writes Lolli, a journey into an unknown land to open a new, connected route; once the road is open, we correct it, expand it. Just as fairy tales offer a narrative structure in which new characters can be inserted into recurring forms of the genre in original ways, in mathematics, each new abstract concept is the protagonist of a different theory supported by the general techniques of mathematical reasoning. In ancient Greece, there was more than an analogy between literature and mathematics, there was direct influence. Euclid’s proofs have roots in poetry and rhetoric. Mathematics, Lolli asserts, is not the mere manipulation of formulas.

Effective C Robert C. Seacord 2020-08-11 A detailed introduction to the C programming language for

experienced programmers. The world runs on code written in the C programming language, yet most schools begin the curriculum with Python or Java. Effective C bridges this gap and brings C into the modern era--covering the modern C17 Standard as well as potential C2x features. With the aid of this instant classic, you'll soon be writing professional, portable, and secure C programs to power robust systems and solve real-world problems. Robert C. Seacord introduces C and the C Standard Library while addressing best practices, common errors, and open debates in the C community. Developed together with other C Standards committee experts, Effective C will teach you how to debug, test, and analyze C programs. You'll benefit from Seacord's concise explanations of C language constructs and behaviors, and from his 40 years of coding experience. You'll learn: • How to identify and handle undefined behavior in a C program • The range and representations of integers and floating-point values • How dynamic memory allocation works and how to use nonstandard functions • How to use character encodings and types • How to perform I/O with terminals and filesystems using C Standard streams and POSIX file descriptors • How to understand the C compiler's translation phases and the role of the preprocessor • How to test, debug, and analyze C programs Effective C will teach you how to write professional, secure, and portable C code that will stand the test of time and help strengthen the foundation of the computing world.

Grokking Algorithms Aditya Bhargava 2016-05-12 Summary Grokking Algorithms is a fully illustrated, friendly guide that teaches you how to apply common algorithms to the practical problems you face every day as a programmer. You'll start with sorting and searching and, as you build up your skills in thinking algorithmically, you'll tackle more complex concerns such as data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and fully annotated code samples in Python. Learning about algorithms doesn't have to be boring! Get a sneak peek at the fun, illustrated, and friendly examples you'll find in Grokking Algorithms on Manning Publications' YouTube channel. Continue your journey into the world of algorithms with Algorithms in Motion, a practical, hands-on video course available exclusively at Manning.com (www.manning.com/livevideo/algorithms-in-motion). Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology An algorithm is nothing more than a step-by-step procedure for solving a problem. The algorithms you'll use most often as a programmer have already been discovered, tested, and proven. If you want to understand them but refuse to slog through dense multipage proofs, this is the book for you. This fully illustrated and engaging guide makes it easy to learn how to use the most important algorithms effectively in your own programs. About the Book Grokking

Algorithms is a friendly take on this core computer science topic. In it, you'll learn how to apply common algorithms to the practical programming problems you face every day. You'll start with tasks like sorting and searching. As you build up your skills, you'll tackle more complex problems like data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and fully annotated code samples in Python. By the end of this book, you will have mastered widely applicable algorithms as well as how and when to use them. What's Inside Covers search, sort, and graph algorithms Over 400 pictures with detailed walkthroughs Performance trade-offs between algorithms Python-based code samples About the Reader This easy-to-read, picture-heavy introduction is suitable for self-taught programmers, engineers, or anyone who wants to brush up on algorithms. About the Author Aditya Bhargava is a Software Engineer with a dual background in Computer Science and Fine Arts. He blogs on programming at adit.io. Table of Contents Introduction to algorithms Selection sort Recursion Quicksort Hash tables Breadth-first search Dijkstra's algorithm Greedy algorithms Dynamic programming K-nearest neighbors

Data Feminism Catherine D'Ignazio 2020-03-31 A new way of thinking about data science and data ethics that is informed by the ideas of intersectional feminism. Today, data science is a form of power. It has been used to expose injustice,

improve health outcomes, and topple governments. But it has also been used to discriminate, police, and surveil. This potential for good, on the one hand, and harm, on the other, makes it essential to ask: Data science by whom? Data science for whom? Data science with whose interests in mind? The narratives around big data and data science are overwhelmingly white, male, and techno-heroic. In Data Feminism, Catherine D'Ignazio and Lauren Klein present a new way of thinking about data science and data ethics—one that is informed by intersectional feminist thought. Illustrating data feminism in action, D'Ignazio and Klein show how challenges to the male/female binary can help challenge other hierarchical (and empirically wrong) classification systems. They explain how, for example, an understanding of emotion can expand our ideas about effective data visualization, and how the concept of invisible labor can expose the significant human efforts required by our automated systems. And they show why the data never, ever “speak for themselves.” Data Feminism offers strategies for data scientists seeking to learn how feminism can help them work toward justice, and for feminists who want to focus their efforts on the growing field of data science. But Data Feminism is about much more than gender. It is about power, about who has it and who doesn't, and about how those differentials of power can be challenged and changed.

Artificial Unintelligence Meredith Broussard 2019-01-29 A guide to

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

do with technology, Broussard tells us, we can make better choices about what we should do with it to make the world better for everyone.

The Algorithm Design Manual Steven S Skiena 2009-04-05 This newly expanded and updated second edition of the best-selling classic continues to take the "mystery" out of designing algorithms, and analyzing their efficacy and efficiency. Expanding on the first edition, the book now serves as the primary textbook of choice for algorithm design courses while maintaining its status as the premier practical reference guide to algorithms for programmers, researchers, and students. The reader-friendly Algorithm Design Manual provides straightforward access to combinatorial algorithms technology, stressing design over analysis. The first part, Techniques, provides accessible instruction on methods for designing and analyzing computer algorithms. The second part, Resources, is intended for browsing and reference, and comprises the catalog of algorithmic resources, implementations and an extensive bibliography. NEW to the second edition: • Doubles the tutorial material and exercises over the first edition • Provides full online support for lecturers, and a completely updated and improved website component with lecture slides, audio and video • Contains a unique catalog identifying the 75 algorithmic problems that arise most often in practice, leading the reader down the right path to solve them • Includes several NEW "war stories" relating experiences from real-world

applications • Provides up-to-date links leading to the very best algorithm implementations available in C, C++, and Java

Once Upon an Algorithm Martin Erwig 2017-08-18 How Hansel and Gretel, Sherlock Holmes, the movie Groundhog Day, Harry Potter, and other familiar stories illustrate the concepts of computing. Picture a computer scientist, staring at a screen and clicking away frantically on a keyboard, hacking into a system, or perhaps developing an app. Now delete that picture. In Once Upon an Algorithm, Martin Erwig explains computation as something that takes place beyond electronic computers, and computer science as the study of systematic problem solving. Erwig points out that many daily activities involve problem solving. Getting up in the morning, for example: You get up, take a shower, get dressed, eat breakfast. This simple daily routine solves a recurring problem through a series of well-defined steps. In computer science, such a routine is called an algorithm. Erwig illustrates a series of concepts in computing with examples from daily life and familiar stories. Hansel and Gretel, for example, execute an algorithm to get home from the forest. The movie Groundhog Day illustrates the problem of unsolvability; Sherlock Holmes manipulates data structures when solving a crime; the magic in Harry Potter's world is understood through types and abstraction; and Indiana Jones demonstrates the complexity of searching. Along the way, Erwig also discusses representations and

different ways to organize data; “intractable” problems; language, syntax, and ambiguity; control structures, loops, and the halting problem; different forms of recursion; and rules for finding errors in algorithms. This engaging book explains computation accessibly and shows its relevance to daily life. Something to think about next time we execute the algorithm of getting up in the morning.

Building a StoryBrand Donald Miller 2017-10-10 More than half-a-million business leaders have discovered the power of the StoryBrand Framework, created by New York Times best-selling author and marketing expert Donald Miller. And they are making millions. If you use the wrong words to talk about your product, nobody will buy it. Marketers and business owners struggle to effectively connect with their customers, costing them and their companies millions in lost revenue. In a world filled with constant, on-demand distractions, it has become near-impossible for business owners to effectively cut through the noise to reach their customers, something Donald Miller knows first-hand. In this book, he shares the proven system he has created to help you engage and truly influence customers. The StoryBrand process is a proven solution to the struggle business leaders face when talking about their companies. Without a clear, distinct message, customers will not understand what you can do for them and are unwilling to engage, causing you to lose potential sales, opportunities for customer engagement, and much more.

In Building a StoryBrand, Donald Miller teaches marketers and business owners to use the seven universal elements of powerful stories to dramatically improve how they connect with customers and grow their businesses. His proven process has helped thousands of companies engage with their existing customers, giving them the ultimate competitive advantage. Building a StoryBrand does this by teaching you: The seven universal story points all humans respond to; The real reason customers make purchases; How to simplify a brand message so people understand it; and How to create the most effective messaging for websites, brochures, and social media. Whether you are the marketing director of a multibillion-dollar company, the owner of a small business, a politician running for office, or the lead singer of a rock band, Building a StoryBrand will forever transform the way you talk about who you are, what you do, and the unique value you bring to your customers.

Algorithms to Live By Brian Christian 2016-04-19 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.

Cloud Cuckoo Land (Large Print Edition) Anthony Doerr 2021-09-28 From the Pulitzer Prize–winning author of All the Light We Cannot See, perhaps the most bestselling and beloved literary fiction of our time, comes a triumph of imagination and compassion, a soaring novel about children on the cusp of adulthood in a broken world, who find resilience, hope, and story. The heroes of Cloud Cuckoo Land are trying to figure out the world around them: Anna and Omeir, on opposite sides of the formidable city walls during the 1453 siege of Constantinople; teenage idealist Seymour in an attack on a public library in present day Idaho; and Konstance, on an interstellar ship bound for an exoplanet, decades from now. Like Marie-Laure and Werner

in All the Light We Cannot See, Anna, Omeir, Seymour, and Konstance are dreamers and outsiders who find resourcefulness and hope in the midst of peril. An ancient text—the story of Aethon, who longs to be turned into a bird so that he can fly to a utopian paradise in the sky—provides solace and mystery to these unforgettable characters. Doerr has created a tapestry of times and places that reflects our vast interconnectedness—with other species, with each other, with those who lived before us and those who will be here after we’re gone. Dedicated to “the librarians then, now, and in the years to come,” Cloud Cuckoo Land is a hauntingly beautiful and redemptive novel about stewardship—of the book, of the Earth, of the human heart.

The Joy of Search Daniel M. Russell 2019-10-01 How to be a great online searcher, demonstrated with step-by-step searches for answers to a series of intriguing questions (for example, “Is that plant poisonous?”). We all know how to look up something online by typing words into a search engine. We do this so often that we have made the most famous search engine a verb: we Google it—“Japan population” or “Nobel Peace Prize” or “poison ivy” or whatever we want to know. But knowing how to Google something doesn't make us search experts; there's much more we can do to access the massive collective knowledge available online. In The Joy of Search, Daniel Russell shows us how to be great online researchers. We don't have to be computer geeks or a scholar searching out obscure facts;

we just need to know some basic methods. Russell demonstrates these methods with step-by-step searches for answers to a series of intriguing questions—from “what is the wrong side of a towel?” to “what is the most likely way you will die?” Along the way, readers will discover essential tools for effective online searches—and learn some fascinating facts and interesting stories. Russell explains how to frame search queries so they will yield information and describes the best ways to use such resources as Google Earth, Google Scholar, Wikipedia, and Wikimedia. He shows when to put search terms in double quotes, how to use the operator (*), why metadata is important, and how to triangulate information from multiple sources. By the end of this engaging journey of discovering, readers will have the definitive answer to why the best online searches involve more than typing a few words into Google.

Visual Studio Code for Python Programmers April Speight 2021-06-04 Become proficient and efficient with Visual Studio Code and learn how to integrate all your external tools! Visual Studio Code for Python Programmers helps Python developers become not just familiar, but productive in Visual Studio Code. To start, you’ll find the steps for installing Visual Studio Code on Windows, Mac and Linux platforms, along with an introduction to the editing features of the workspace. Coverage of more advanced functionality includes managing source code, debugging, unit testing, and Jupyter Notebook support. The

book finishes with a walk-through of real-world projects which utilize Visual Studio Code features introduced in the book. For developers, the choice of an editor is a very personal one. You have idiosyncratic needs and wants that are unique to you as a developer. This book will help you learn how to customize Visual Studio Code to meet your needs and Python development workflow. Introduces you to the features of the Visual Studio Code workspace and how those features can be customized Demonstrates how Visual Studio Code allows you to choose your structure according to your needs Covers editing code in Python, including syntax highlighting, code completion, object definition, refactoring, and code navigation Describes Git integration and how to perform common Git functions (commits, checkouts, branches, and merges) from within Visual Studio Code Highlights debugging features for Python developers A final section on Real World Applications will step you through several examples (and features integration with Django, Flask, Jupyter Notebook, Docker, and Azure), so you can hit the ground running with Visual Studio Code.