Deep Thinking: Where Machine Intelligence Ends And Human Creativity Begins

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.
The stunning story of Russia's slide back into a dictatorship-and how the West is now paying the price for allowing it to happen. The ascension of Vladimir Putin-a former lieutenant colonel of the KGB-to the presidency of Russia in 1999 was a strong signal that the country was headed away from democracy. Yet in the intervening years-as America and the world's other leading powers have continued to appease him-Putin has grown not only into a dictator but an internationalthreat. With his vast resources and nuclear arsenal, Putin is at the center of a worldwide assault on political liberty and the modern world order. For Garry Kasparov, none of this is

news. He has been a vocal critic of Putin for over a decade, even leading the pro-democracy opposition to him in the farcical 2008 presidential election. Yet years of seeing his Cassandra-like prophecies about Putin's intentions fulfilled have left Kasparov with a darker truth: Putin's Russia, like ISIS or Al Qaeda, defines itself in opposition to the free countries of the world. As Putin has grown ever more powerful, the threat he poses has grown from local to regional and finally to global. In this urgent book, Kasparov shows that the collapse of the Soviet Union was not an endpoint- only a change of seasons, as the Cold War melted into a new spring. But now, after years of complacency and poor judgment, winter is once again upon us. Argued with the force of Kasparov's world-class intelligence, conviction, and hopes for his home country, Winter Is Coming reveals Putin for what he is: an existential danger hiding in plain sight.

"Buy the paperback version of this book and get the kindle book version for free" you know what it is and where we are with AI? where can we arrive? should we be afraid of artificial intelligence? The capabilities of artificial intelligence have fascinated human beings for decades. Advancements in the years following the Second World War provided fodder for science fiction writers as well as computer scientists as they examined what a world filled with artificially intelligent machines might look like. Early imaginings in this area were often strange and exaggerated because the minds that imagined them came from a world were machines were little more than extensions of the human beings that controlled them. In Artificial Intelligence: A Modern Approach, the reader will see that as computer technology advanced, artificial intelligence and human beings seemed to evolve together, creating a world in which both occupied a special place. In Artificial Intelligence: A Modern Approach, the reader will understand artificial intelligence well enough to recognize all the ways in which they already utilize artificial intelligence. Though many men and women in the world today use AI technology like Siri and Alexa, some do not make active use of this type of technology and they see AI as something far removed from their lives. As the reader comes to understand AI better, they will see how facial recognition software, language processing software, and self-driving and maneuvering technology all represent applications of AI that are already a part of their life. Artificial Intelligence: A Modern Approach will explore the liminal world of artificial intelligence, machine learning, and deep learning, and explain how these three forces are shaping the world of the future. No exploration of artificial intelligence would be complete without a review of where AI advancements in the future are likely to lead, specifically in the realms of medicine and business. Artificial Intelligence: A Modern Approach will explore applications of AI in the areas of medicine and business and attempt to paint a picture of how advancements in AI will change the face of these industries. Finally, as much of AI has taken a page from the fiction realm, this book will examine fictional portrayals of AI technology and attempt to separate fact from fiction. This book is designed for the AI enthusiast and

the AI beginner. The reader will gain knowledge of artificial intelligence that they can apply to whatever endeavor they choose. Would you like to know more? Scroll to the top of the page and select the buy now button. In May 1997, the world watched as Garry Kasparov, the greatest chess player in the world, was defeated for the first time by the IBM supercomputer Deep Blue. It was a watershed moment in the history of technology: machine intelligence had arrived at the point where it could best human intellect. It wasn't a coincidence that Kasparov became the symbol of man's fight against the machines. Chess has long been the fulcrum in development of machine intelligence; the hoax automaton 'The Turk' in the 18th century and Alan Turing's first chess program in 1952 were two early examples of the quest for machines to think like humans - a talent we measured by their ability to beat their creators at chess. As the pre-eminent chessmaster of the 80s and 90s, it was Kasparov's blessing and his curse to play against each generation's strongest computer champions, contributing to their development and advancing the field. Like all passionate competitors, Kasparov has taken his defeat and learned from it. He has devoted much energy to devising ways in which humans can partner with machines in order to produce results better than either can achieve alone. During the twenty years since playing Deep Blue, he's played both with and against machines, learning a great deal about our vital relationship with our most remarkable creations. Ultimately, he's become convinced that by embracing the competition between human and machine intelligence, we can spend less time worrying about being replaced and more thinking of new challenges to conquer. In this breakthrough book, Kasparov tells his side of the story of Deep Blue for the first time - what it was like to strategize against an implacable, untiring opponent - the mistakes he made and the reasons the odds were against him. But more than that, he tells his story of AI more generally, and how he's evolved to embrace it, taking part in an urgent debate with philosophers worried about human values, programmers creating self-learning neural networks, and engineers of cutting edge robotics.

The truth about AI from the people building it
Artificial Intelligence a Modern Approach
Where Machine Intelligence and Human Ingenuity Achieve the Impossible
Deep Learning for Coders with fastai and PyTorch
Behind Deep Blue
The Sentient Machine
Artificial Intelligence Applied to Modern Lives in Medicine, Machine Learning, Deep Learning, Business and Finance

A fascinating look at Artificial Intelligence, from its humble Cold War beginnings to the dazzling future that is just around the corner. When most of us think about Artificial Intelligence, our minds go straight to cyborgs, robots, and sci-fi thrillers where machines take over the world. But the truth is that Artificial Intelligence is

already among us. It exists in our smartphones, fitness trackers, and refrigerators that tell us when the milk will expire. In some ways, the future people dreamed of at the World's Fair in the 1960s is already here. We're teaching our machines how to think like humans, and they're learning at an incredible rate. In Thinking Machines, technology journalist Luke Dormehl takes you through the history of AI and how it makes up the foundations of the machines that think for us today. Furthermore, Dormehl speculates on the incredible--and possibly terrifying--future that's much closer than many would imagine. This remarkable book will invite you to marvel at what now seems commonplace and to dream about a future in which the scope of humanity may need to broaden itself to include intelligent machines. A pioneer of artificial intelligence shows how the study of causality revolutionized science and the world 'Correlation does not imply causation.' This mantra was invoked by scientists for decades in order to avoid taking positions as to whether one thing caused another, such as smoking and cancer and carbon dioxide and global warming. But today, that taboo is dead. The causal revolution, sparked by world-renowned computer scientist Judea Pearl and his colleagues, has cut through a century of confusion and placed cause and effect on a firm scientific basis. Now, Pearl and science journalist Dana Mackenzie explain causal thinking to general readers for the first time, showing how it allows us to explore the world that is and the worlds that could have been. It is the essence of human and artificial intelligence. And just as Pearl's discoveries have enabled machines to think better, The Book of Why explains how we can think better. A leading artificial intelligence researcher lays out a new approach to AI that will enable people to coexist successfully with increasingly intelligent machines. Explores universal questions about humanity's capacity for living and thriving in the coming age of sentient machines and AI, examining debates from opposing perspectives while discussing emerging intellectual diversity and its potential role in enabling a positive life.
AI 2041
Deep Medicine
Human Compatible
Vital Lessons for Every Chess Player Improved and Expanded

The New Science of Cause and Effect
Smarter Than You Think
The Book of Why
"From start to finish, the best book to help you learn AI algorithms and recall why and how you use them." - Linda Ristevski, York Region District School Board "This book takes an impossibly broad area of computer science and communicates what working developers need to understand in a clear and thorough way." - David Jacobs, Product Advance Local Key Features Master the core algorithms of deep learning and AI Build an intuitive understanding of AI problems and solutions Written in simple language, with lots of illustrations and hands-on examples Creative coding exercises, including building a maze puzzle game and exploring drone optimization About The Book "Artificial intelligence" requires teaching a computer how to approach different types of problems in a systematic way. The core of AI is the algorithms that the system uses to do things like identifying objects in an image, interpreting the meaning of text, or looking for patterns in data to spot fraud and other anomalies. Mastering the core algorithms for search, image recognition, and other common tasks is essential to building good AI applications Grokking Artificial Intelligence Algorithms uses illustrations, exercises, and jargon-free explanations to teach fundamental AI concepts.You'll explore coding challenges like detecting bank fraud, creating artistic masterpieces, and setting a self-driving car in motion. All you need is the algebra you remember from high school math class and beginning programming skills. What You Will Learn Use cases for different AI algorithms Intelligent search for decision making Biologically inspired algorithms Machine learning and neural networks Reinforcement learning to build a better robot This Book Is Written For For software developers with high school–level math skills. About the Author Rishal Hurbans is a technologist, startup and AI group founder, and international speaker. Table of Contents 1 Intuition of artificial intelligence 2 Search fundamentals 3 Intelligent search 4 Evolutionary algorithms 5 Advanced evolutionary approaches 6 Swarm intelligence: Ants 7 Swarm intelligence: Particles 8 Machine learning 9 Artificial neural networks 10 Reinforcement learning with Q-learning
The far right is back with a vengeance. After several decades at the political margins, far-right politics has again taken center stage. Three of the world's largest democracies – Brazil, India, and the United States – now have a radical right leader, while far-right parties continue to increase their profile and support within Europe. In this timely book, leading global expert on political extremism Cas Mudde provides a concise overview of the fourth wave of postwar far-right politics, exploring its history, ideology, organization, causes, and consequences, as well as the responses available to civil society, party, and state actors to challenge its ideas and influence. What defines this current far-right renaissance, Mudde argues, is its mainstreaming and normalization within the contemporary political landscape. Challenging orthodox thinking on the relationship between

conventional and far-right politics, Mudde offers a complex and insightful picture of one of the key political challenges of our time.
Science world luminary John Brockman assembles twenty-five of the most important scientific minds, people who have been thinking about the field artificial intelligence for most of their careers, for an unparalleled round-table examination about mind, thinking, intelligence and what it means to be human. "Artificial intelligence is today's story--the story behind all other stories. It is the Second Coming and the Apocalypse at the same time: Good AI versus evil AI." --John Brockman More than sixty years ago, mathematician-philosopher Norbert Wiener published a book on the place of machines in society that ended with a warning: "we shall never receive the right answers to our questions unless we ask the right questions.... The hour is very late, and the choice of good and evil knocks at our door." In the wake of advances in unsupervised, self-improving machine learning, a small but influential community of thinkers is considering Wiener's words again. In Possible Minds, John Brockman gathers their disparate visions of where AI might be taking us. The fruit of the long history of Brockman's profound engagement with the most important scientific minds who have been thinking about AI--from Alison Gopnik and David Deutsch to Frank Wilczek and Stephen Wolfram--Possible Minds is an ideal introduction to the landscape of crucial issues AI presents. The collision between opposing perspectives is salutary and exhilarating; some of these figures, such as computer scientist Stuart Russell, Skype co-founder Jaan Tallinn, and physicist Max Tegmark, are deeply concerned with the threat of AI, including the existential one, while others, notably robotics entrepreneur Rodney Brooks, philosopher Daniel Dennett, and bestselling author Steven Pinker, have a very different view. Serious, searching and authoritative, Possible Minds lays out the intellectual landscape of one of the most important topics of our time.
In May 1997, the world watched as Garry Kasparov, the greatest chess player in the world, was defeated for the first time by the IBM supercomputer Deep Blue. It was a watershed moment in the history of technology: machine intelligence had arrived at the point where it could best human intellect. It wasn't a coincidence that Kasparov became the symbol of man's fight against the machines. Chess has long been the fulcrum in development of machine intelligence; the hoax automaton "The Turk" in the 18th century and Alan Turing's first chess program in 1952 were two early examples of the quest for machines to think like humans—a talent we measured by their ability to beat their creators at chess. As the preeminent chessmaster of the 80s and 90s, it was Kasparov's blessing and his curse to play against each generation's strongest computer champions, contributing to their development and advancing the field. Like all passionate competitors, Kasparov has taken his defeat and learned from it. He has devoted much energy to devising ways in which humans can partner with machines in order to produce results better than either can achieve alone. During the twenty years since playing Deep Blue, he's played both

with and against machines, learning a great deal about our vital relationship with our most remarkable creations. Ultimately, he's become convinced that by embracing the competition between human and machine intelligence, we can spend less time worrying about being replaced and more thinking of new challenges to conquer. In this breakthrough book, Kasparov tells his side of the story of Deep Blue for the first time—what it was like to strategize against an implacable, untiring opponent—the mistakes he made and the reasons the odds were against him. But more than that, he tells his story of AI more generally, and how he's evolved to embrace it, taking part in an urgent debate with philosophers worried about human values, programmers creating self-learning neural networks, and engineers of cutting edge robotics. He surveys the serious questions facing a world that is becoming increasingly reliant on AI, creating an essential guide for the business readers and educators he speaks to by the thousands every year.
Winning Lessons from a Champion's Life
The Future of Artificial Intelligence
Building the Computer That Defeated the World Chess Champion
Making the Right Moves, from the Board to the Boardroom
Where Machine Intelligence Ends and Human Creativity Begins
The Art of Failure
Architects of Intelligence
One of America's top doctors reveals how AI will empower physicians and revolutionize patient care Medicine has become inhuman, to disastrous effect. The doctor-patient relationship--the heart of medicine--is broken: doctors are too distracted and overwhelmed to truly connect with their patients, and medical errors and misdiagnoses abound. In Deep Medicine, leading physician Eric Topol reveals how artificial intelligence can help. AI has the potential to transform everything doctors do, from notetaking and medical scans to diagnosis and treatment, greatly cutting down the cost of medicine and reducing human mortality. By freeing physicians from the tasks that interfere with human connection, AI will create space for the real healing that takes place between a doctor who can listen and a patient who needs to be heard. Innovative, provocative, and hopeful, Deep Medicine shows us how the awesome power of AI can make medicine better, for all the humans involved.
The riveting quest to construct the machine that would take on the world's greatest human chess player—told by the man who built it On May 11, 1997, millions worldwide heard news of a stunning victory, as a machine defeated the defending world chess champion, Garry Kasparov. Behind Deep Blue tells the inside story of the quest to create the mother of all chess machines and what happened at the two historic Deep Blue vs. Kasparov matches. Feng-hsiung Hsu, the system architect of Deep Blue, reveals how a

modest student project started at Carnegie Mellon in 1985 led to the production of a multimillion-dollar supercomputer. Hsu discusses the setbacks, tensions, and rivalries in the race to develop the ultimate chess machine, and the wild controversies that culminated in the final triumph over the world's greatest human player. With a new foreword by Jon Kleinberg and a new preface from the author, Behind Deep Blue offers a remarkable look at one of the most famous advances in artificial intelligence, and the brilliant toolmaker who invented it.

The most powerful weapon in business today is the alliance between the mathematical smarts of machines and the imaginative human intellect of great leaders. Together they make the mathematical corporation, the business model of the future. We are at a once-in-a-decade breaking point similar to the quality revolution of the 1980s and the dawn of the internet age in the 1990s: leaders must transform how they run their organizations, or competitors will bring them crashing to earth--often overnight. Mathematical corporations--the organizations that will master the future--will outcompete high-flying rivals by merging the best of human ingenuity with machine intelligence. While smart machines are weapon number one for organizations, leaders are still the drivers of breakthroughs. Only they can ask crucial questions to capitalize on business opportunities newly discovered in oceans of data. This dynamic combination will make possible the fulfillment of missions that once seemed out of reach, even impossible to attain. Josh Sullivan and Angela Zutavern's extraordinary examples include the entrepreneur who upended preventive health care, the oceanographer who transformed fisheries management, and the pharmaceutical company that used algorithm-driven optimization to boost vaccine yields. Together they offer a profoundly optimistic vision for a dazzling new phase in business, and a playbook for how smart companies can manage the essential combination of human and machine.

An exploration of why we play video games despite the fact that we are almost certain to feel unhappy when we fail at them. We may think of video games as being "fun," but in The Art of Failure, Jesper Juul claims that this is almost entirely mistaken. When we play video games, our facial expressions are rarely those of happiness or bliss. Instead, we frown, grimace, and shout in frustration as we lose, or die, or fail to advance to the next level. Humans may have a fundamental desire to succeed and feel competent, but game players choose to engage in an activity in which they are nearly certain to fail and feel incompetent. So why do we play video games even though they make us unhappy? Juul examines this paradox. In video games, as in tragic works of art, literature, theater, and cinema, it seems that we want to experience unpleasantness even if

we also dislike it. Reader or audience reaction to tragedy is often explained as catharsis, as a purging of negative emotions. But, Juul points out, this doesn't seem to be the case for video game players. Games do not purge us of unpleasant emotions; they produce them in the first place. What, then, does failure in video game playing do? Juul argues that failure in a game is unique in that when you fail in a game, you (not a character) are in some way inadequate. Yet games also motivate us to play more, in order to escape that inadequacy, and the feeling of escaping failure (often by improving skills) is a central enjoyment of games. Games, writes Juul, are the art of failure: the singular art form that sets us up for failure and allows us to experience it and experiment with it. The Art of Failure is essential reading for anyone interested in video games, whether as entertainment, art, or education.

Contact
Human + Machine
Winter Is Coming
Why Vladimir Putin and the Enemies of the Free World Must Be Stopped
Fundamentals of Deep Learning
Artificial Intelligence
The Quest for Artificial Intelligence

Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With fastai, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of fastai, show you how to train a model on a wide range of tasks using fastai and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala

Two leaders in the field offer a compelling analysis of the current state of the art and reveal the steps we must take to achieve a truly robust artificial intelligence. Despite the hype surrounding AI, creating an intelligence that rivals or exceeds human levels is far more complicated than we have been led to believe. Professors Gary Marcus and Ernest Davis have spent their careers at the forefront of AI research and have witnessed some of the greatest milestones in the field, but they argue that a computer beating a human in Jeopardy! does not signal that we are on the doorstep of fully autonomous cars or superintelligent machines. The achievements in the field thus far have occurred in closed systems with fixed sets of rules, and these approaches are too narrow to achieve genuine intelligence. The real world, in contrast, is wildly complex and open-ended. How can we bridge this gap? What will the consequences be when we do? Taking inspiration from the human mind, Marcus and Davis explain what we need to advance AI to the next level, and

suggest that if we are wise along the way, we won't need to worry about a future of machine overlords. If we focus on endowing machines with common sense and deep understanding, rather than simply focusing on statistical analysis and gatherine ever larger collections of data, we will be able to create an AI we can trust--in our homes, our cars, and our doctors' offices. Rebooting AI provides a lucid, clear-eyed assessment of the current science and offers an inspiring vision of how a new generation of AI can make our lives better.

A revelatory and timely look at how technology boosts our cognitive abilities—making us smarter, more productive, and more creative than ever It's undeniable—technology is changing the way we think. But is it for the better? Amid a chorus of doomsayers, Clive Thompson delivers a resounding "yes." In Smarter Than You Think, Thompson shows that every technological innovation—from the written word to the printing press to the telegraph—has provoked the very same anxieties that plague us today. We panic that life will never be the same, that our attentions are eroding, that culture is being trivialized. But, as in the past, we adapt—learning to use the new and retaining what is good of the old. Smarter Than You Think embraces and extols this transformation, presenting an exciting vision of the present and the future.

With the reinvigoration of neural networks in the 2000s, deep learning has become an extremely active area of research, one that's paving the way for modern machine learning. In this practical book, author Nikhil Buduma provides examples and clear explanations to guide you through major concepts of this complicated field. Companies such as Google, Microsoft, and Facebook are actively growing in-house deep-learning teams. For the rest of us, however, deep learning is still a pretty complex and difficult subject to grasp. If you're familiar with Python, and have a background in calculus, along with a basic understanding of machine learning, this book will get you started. Examine the foundations of machine learning and neural networks Learn how to train feed-forward neural networks Use TensorFlow to implement your first neural network Manage problems that arise as you begin to make networks deeper Build neural networks that analyze complex images Perform effective dimensionality reduction using autoencoders Dive deep into sequence analysis to examine language Learn the fundamentals of reinforcement learning

100 Endgames You Must Know

Artificial Intelligence Trends for Data Analytics Using Machine Learning and Deep Learning Approaches

Why Computers Can't Think the Way We Do

A Guide for Thinking Humans

Mind Master

Reimagining Work in the Age of AI

How Life Imitates Chess

A scientist who has spent a career developing Artificial Intelligence takes a realistic look at the technological challenges and assesses the likely effect of AI on the future. How will Artificial Intelligence (AI) impact our lives? Toby Walsh, one of the leading AI researchers in the world, takes a critical look at the many ways in which "thinking machines" will change our world. Based on a deep understanding of the technology, Walsh describes where Artificial Intelligence is today, and where it will take us. * Will automation take away most of our jobs? * Is a "technological singularity" near? * What is the chance that robots will take over? * How do we best prepare for this future? The author concludes that, if we plan well, AI could be our greatest legacy, the last invention human beings will ever need to make.

Financial Times Best Books of the Year 2018 TechRepublic Top Books Every Techie Should Read Book Description How will AI evolve and what major innovations are on the horizon? What will its impact be on the job market, economy, and society? What is the path toward human-level machine intelligence? What should we be concerned about as artificial intelligence advances? Architects of Intelligence contains a series of in-depth, one-to-one interviews where New York Times bestselling author, Martin Ford, uncovers the truth behind these questions from some of the brightest minds in the Artificial Intelligence community. Martin has wide-ranging conversations with twenty-three of the world's foremost researchers and entrepreneurs working in AI and robotics: Demis Hassabis (DeepMind), Ray Kurzweil (Google), Geoffrey Hinton (Univ. of Toronto and Google), Rodney Brooks (Rethink Robotics), Yann LeCun (Facebook) , Fei-Fei Li (Stanford and Google), Yoshua Bengio (Univ. of Montreal), Andrew Ng (AI Fund), Daphne Koller (Stanford), Stuart Russell (UC Berkeley), Nick Bostrom (Univ. of Oxford), Barbara Grosz (Harvard), David Ferrucci (Elemental Cognition), James Manyika (McKinsey), Judea Pearl (UCLA), Josh Tenenbaum (MIT), Rana el Kaliouby (Affectiva), Daniela Rus (MIT), Jeff Dean (Google), Cynthia Breazeal (MIT), Oren Etzioni (Allen Institute for AI), Gary Marcus (NYU), and Bryan Johnson (Kernel). Martin Ford is a prominent futurist, and author of Financial Times Business Book of the Year, Rise of the Robots. He speaks at conferences and companies around the world on what AI and automation might mean for the future. Meet the minds behind the AI superpowers as they discuss the science, business and ethics of modern artificial intelligence. Read James Manyika's thoughts on AI analytics, Geoffrey Hinton's breakthroughs in AI programming and development, and Rana el Kaliouby's insights into AI marketing. This AI book collects the opinions of the luminaries of the AI business, such as Stuart Russell (coauthor of the leading AI textbook), Rodney Brooks (a leader in AI robotics), Demis Hassabis (chess prodigy and mind behind AlphaGo), and Yoshua Bengio (leader in deep learning) to complete your AI education and give you an AI advantage in 2019 and the future.

This book is a history of artificial intelligence, that audacious effort to duplicate in an artifact what we consider to be our most important property—our intelligence. It is an invitation for anybody with an interest in the future of the human race to participate in the inquiry.

An argument that—despite dramatic advances in the field—artificial intelligence is nowhere near developing systems that are genuinely intelligent. In this provocative book, Brian Cantwell Smith argues that artificial intelligence is nowhere near developing systems that are genuinely intelligent. Second wave AI, machine learning, even visions of third-wave AI: none will lead to human-level intelligence and judgment, which have been honed over millennia. Recent advances in AI may be of epochal significance, but human intelligence is of a different order than even the most powerful calculative ability enabled by new

computational capacities. Smith calls this AI ability "reckoning," and argues that it does not lead to full human judgment—dispassionate, deliberative thought grounded in ethical commitment and responsible action. Taking judgment as the ultimate goal of intelligence, Smith examines the history of AI from its first-wave origins ("good old-fashioned AI," or GOFAI) to such celebrated second-wave approaches as machine learning, paying particular attention to recent advances that have led to excitement, anxiety, and debate. He considers each AI technology's underlying assumptions, the conceptions of intelligence targeted at each stage, and the successes achieved so far. Smith unpacks the notion of intelligence itself—what sort humans have, and what sort AI aims at. Smith worries that, impressed by AI's reckoning prowess, we will shift our expectations of human intelligence. What we should do, he argues, is learn to use AI for the reckoning tasks at which it excels while we strengthen our commitment to judgment, ethics, and the world.

Develop machine intelligence from scratch using real artificial intelligence use cases

The Big Nine

Rebooting AI

The Coming Age of Artificial Intelligence

Machines Who Think

Thinking Machines

The Human Future of Artificial Intelligence

In May 1997, the world watched as Garry Kasparov, the greatest chess player in the world, was defeated for the first time by the IBM supercomputer Deep Blue. It was a watershed moment in the history of technology: machine intelligence had arrived at the point where it could best human intellect. It wasn't a coincidence that Kasparov became the symbol of man's fight against the machines. Chess has long been the fulcrum in development of machine intelligence; the hoax automaton 'The Turk' in the 18th century and Alan Turing's first chess program in 1952 were two early examples of the quest for machines to think like humans -- a talent we measured by their ability to beat their creators at chess. As the pre-eminent chessmaster of the 80s and 90s, it was Kasparov's blessing and his curse to play against each generation's strongest computer champions, contributing to their development and advancing the field. Like all passionate competitors, Kasparov has taken his defeat and learned from it. He has devoted much energy to devising ways in which humans can partner with machines in order to produce results better than either can achieve alone. During the twenty years since playing Deep Blue, he's

played both with and against machines, learning a great deal about our vital relationship with our most remarkable creations. Ultimately, he's become convinced that by embracing the competition between human and machine intelligence, we can spend less time worrying about being replaced and more thinking of new challenges to conquer. In this breakthrough book, Kasparov tells his side of the story of Deep Blue for the first time -- what it was like to strategize against an implacable, untiring opponent -- the mistakes he made and the reasons the odds were against him. But more than that, he tells his story of AI more generally, and how he's evolved to embrace it, taking part in an urgent debate with philosophers worried about human values, programmers creating self-learning neural networks, and engineers of cutting edge robotics.

Artificial intelligence (AI) is a field within computer science that is attempting to build enhanced intelligence into computer systems. This book traces the history of the subject, from the early dreams of eighteenth-century (and earlier) pioneers to the more successful work of today's AI engineers. AI is becoming more and more a part of everyone's life. The technology is already embedded in face-recognizing cameras, speech-recognition software, Internet search engines, and health-care robots, among other applications. The book's many diagrams and easy-to-understand descriptions of AI programs will help the casual reader gain an understanding of how these and other AI systems actually work. Its thorough (but unobtrusive) end-of-chapter notes containing citations to important source materials will be of great use to AI scholars and researchers. This book promises to be the definitive history of a field that has captivated the imaginations of scientists, philosophers, and writers for centuries.

A call-to-arms about the broken nature of artificial intelligence, and the powerful corporations that are turning the human-machine relationship on its head. We like to think that we are in control of the future of "artificial" intelligence. The reality, though, is that we--the everyday people whose data powers AI--aren't actually in control of anything. When, for example, we speak with Alexa, we contribute that data to a system we can't see and have no input into--one largely free from regulation or oversight. The big nine corporations--Amazon, Google, Facebook,

Tencent, Baidu, Alibaba, Microsoft, IBM and Apple--are the new gods of AI and are short-changing our futures to reap immediate financial gain. In this book, Amy Webb reveals the pervasive, invisible ways in which the foundations of AI--the people working on the system, their motivations, the technology itself--is broken. Within our lifetimes, AI will, by design, begin to behave unpredictably, thinking and acting in ways which defy human logic. The big nine corporations may be inadvertently building and enabling vast arrays of intelligent systems that don't share our motivations, desires, or hopes for the future of humanity. Much more than a passionate, human-centered call-to-arms, this book delivers a strategy for changing course, and provides a path for liberating us from algorithmic decision-makers and powerful corporations.

Garry Kasparov was the highest-rated chess player in the world for over twenty years and is widely considered the greatest player that ever lived. In How Life Imitates Chess Kasparov distills the lessons he learned over a lifetime as a Grandmaster to offer a primer on successful decision-making: how to evaluate opportunities, anticipate the future, devise winning strategies. He relates in a lively, original way all the fundamentals, from the nuts and bolts of strategy, evaluation, and preparation to the subtler, more human arts of developing a personal style and using memory, intuition, imagination and even fantasy. Kasparov takes us through the great matches of his career, including legendary duels against both man (Grandmaster Anatoly Karpov) and machine (IBM chess supercomputer Deep Blue), enhancing the lessons of his many experiences with examples from politics, literature, sports and military history. With candor, wisdom, and humor, Kasparov recounts his victories and his blunders, both from his years as a world-class competitor as well as his new life as a political leader in Russia. An inspiring book that combines unique strategic insight with personal memoir, How Life Imitates Chess is a glimpse inside the mind of one of today's greatest and most innovative thinkers.

The Far Right Today
The Mathematical Corporation
How the Tech Titans and Their Thinking Machines Could Warp Humanity
How Artificial Intelligence Can Make Healthcare Human Again

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Artificial Intelligence and the Problem of Control
The Promise of Artificial Intelligence
Deep Thinking
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Garry Kasparov's 1997 chess match against the IBM supercomputer Deep Blue was a watershed moment in the history of technology. It was the dawn of a new era in artificial intelligence: a machine capable of beating the reigning human champion at this most cerebral game. That moment was more than a century in the making, and in this breakthrough book, Kasparov reveals his astonishing side of the story for the first time. He describes how it felt to strategize against an implacable, untiring opponent with the whole world watching, and recounts the history of machine intelligence through the microcosm of chess, considered by generations of scientific pioneers to be a key to unlocking the secrets of human and machine cognition. Kasparov uses his unrivaled experience to look into the future of intelligent machines and sees it bright with possibility. As many critics decry artificial intelligence as a menace, particularly to human jobs, Kasparov shows how humanity can rise to new heights with the help of our most extraordinary creations, rather than fear them. Deep Thinking is a tightly argued case for technological progress, from the man who stood at its precipice with his own career at stake.

Be an adaptive thinker that leads the way to Artificial Intelligence Key Features AI-based examples to guide you in designing and implementing machine intelligence Develop your own method for future AI solutions Acquire advanced AI, machine learning, and deep learning design skills Book Description Artificial Intelligence has the potential to replicate humans in every field. This book serves as a starting point for you to understand how AI is built, with the help of intriguing examples and case studies. Artificial Intelligence By Example will make you an adaptive thinker and help you apply concepts to real-life scenarios. Using some of the most interesting AI examples, right from a simple chess engine to a cognitive chatbot, you will learn how to tackle the machine you are competing with. You will study some of the most advanced machine learning models, understand how to apply AI to blockchain and IoT, and develop emotional quotient in chatbots using neural networks. You will move on to designing AI solutions in a simple manner rather than get confused by complex architectures and techniques. This comprehensive guide will be a starter kit for you to develop AI applications on your own. By the end of this book, will have understood the fundamentals of AI and worked through a number of case studies that will help you develop business vision. What you will learn Use adaptive thinking to solve real-life AI case studies Rise beyond being a modern-day factory code worker Acquire advanced AI, machine learning, and deep learning designing skills Learn about cognitive NLP chatbots, quantum computing, and IoT and blockchain technology Understand future AI solutions and adapt quickly to them Develop out-of-the-box thinking to face any challenge the market presents Who this book is for Artificial Intelligence by Example is a simple, explanatory, and descriptive guide for junior developers, experienced developers, technology consultants, and those interested in AI who want to understand the fundamentals of Artificial Intelligence and implement it practically by devising smart solutions. Prior experience with Python and statistical knowledge is essential to make the most out of this book.

The former world chess champion who played, and lost, against Deep Blue, a supercomputer, in 1997 discusses why he thinks humans should embrace the competition between themselves and machine intelligence.

Melanie Mitchell separates science fact from science fiction in this sweeping examination of the current state of AI and how it is remaking our world No recent scientific enterprise has proved as alluring, terrifying, and filled with extravagant promise and frustrating setbacks as artificial intelligence. The award-winning author Melanie Mitchell, a leading computer scientist, now reveals AI's turbulent history and the recent spate of apparent successes, grand hopes, and emerging fears surrounding it. In Artificial Intelligence, Mitchell turns to the most urgent questions concerning AI today: How intelligent—really—are the best AI programs? How do they work? What can they actually do, and when do they fail? How humanlike do we expect them to become, and how soon do we need to worry about them surpassing us? Along the way, she introduces the dominant models of modern AI and machine

learning, describing cutting-edge AI programs, their human inventors, and the historical lines of thought underpinning recent achievements. She meets with fellow experts such as Douglas Hofstadter, the cognitive scientist and Pulitzer Prize–winning author of the modern classic Gödel, Escher, Bach, who explains why he is "terrified" about the future of AI. She explores the profound disconnect between the hype and the actual achievements in AI, providing a clear sense of what the field has accomplished and how much further it has to go. Interweaving stories about the science of AI and the people behind it, Artificial Intelligence brims with clear-sighted, captivating, and accessible accounts of the most interesting and provocative modern work in the field, flavored with Mitchell's humor and personal observations. This frank, lively book is an indispensable guide to understanding today's AI, its quest for "human-level" intelligence, and its impact on the future for us all.
Ten Visions for Our Future
The Myth of Artificial Intelligence
How Algorithms Are Shaping Our Lives and How We Can Stay in Control
A Human's Guide to Machine Intelligence
Twenty-Five Ways of Looking at AI
Reckoning and Judgment
How Technology Is Changing Our Minds for the Better
AI is radically transforming business. Are you ready? Look around you. Artificial intelligence is no longer just a futuristic notion. It's here right now--in software that senses what we need, supply chains that "think" in real time, and robots that respond to changes in their environment. Twenty-first-century pioneer companies are already using AI to innovate and grow fast. The bottom line is this: Businesses that understand how to harness AI can surge ahead. Those that neglect it will fall behind. Which side are you on? In Human + Machine, Accenture leaders Paul R. Daugherty and H. James (Jim) Wilson show that the essence of the AI paradigm shift is the transformation of all business processes within an organization--whether related to breakthrough innovation, everyday customer service, or personal productivity habits. As humans and smart machines collaborate ever more closely, work processes become more fluid and adaptive, enabling companies to change them on the fly--or to completely reimagine them. AI is changing all the rules of how companies operate. Based on the authors' experience and research with 1,500 organizations, the book reveals how companies are using the new rules of AI to leap ahead on innovation and profitability, as well as what you can do to achieve similar results. It describes six entirely new types of hybrid human + machine roles that every company must develop, and it includes a "leader's guide" with the five crucial principles required to become an AI-fueled business. Human + Machine provides the missing and much-needed management playbook for success in our new age of AI. BOOK PROCEEDS FOR THE AI GENERATION The authors' goal in publishing Human + Machine is to help executives, workers, students and others navigate the changes that AI is making to business and the economy. They believe AI will bring innovations that truly improve the way the world works and lives. However, AI will cause disruption, and many people will need education, training and support to prepare for the newly created jobs. To support this need, the authors are donating the royalties received from the sale of this book to fund education and retraining programs focused on developing fusion skills for the age of artificial intelligence.
'New (4th) and improved edition of an all-time classic The good news about endgames is: • there are relatively few endings you should know by heart • once you know these

endings, that's it. Your knowledge never goes out of date! The bad news is that, all the same, the endgame technique of most players is deficient. Modern time-controls make matters worse: there is simply not enough time to delve deep into the position. Jesus de la Vila debunks the myth that endgame theory is complex and he teaches you to steer the game into a position you are familiar with. This book contains only those endgames that: • show up most frequently • are easy to learn • contain ideas that are useful in more difficult positions. Your performance will improve dramatically because this book brings you: • simple rules • detailed and lively explanations • many diagrams • clear summaries of the most important themes • dozens of tests.

Futurists are certain that humanlike AI is on the horizon, but in fact engineers have no idea how to program human reasoning. AI reasons from statistical correlations across data sets, while common sense is based heavily on conjecture. Erik Larson argues that hyping existing methods will only hold us back from developing truly humanlike AI. 'Doing everything admirably well matters very little if you can't finish the job.' Few people know better than Viswanathan Anand how to think strategically at lightning speed and work under immense pressure to overcome the toughest odds. From the time he learnt to move pieces on a chessboard as a six-year-old, Vishy - as Anand is fondly called - has racked up innumerable accolades. With five World Championship titles, he is a peerless ambassador of chess, and his is one of the most revered names in the sport. In Mind Master, Vishy looks back on a lifetime of games played, opponents tackled and circumstances overcome, and draws from its depths significant tools that will help every reader navigate life's challenges: What role do tactics and strategy play in the preparation for achieving a goal? How can emotions be harnessed to your advantage in tricky situations? What do you need to do to stay relevant in the face of rapidly changing realities? Is unlearning really the only way to learn? These are just some of the nuggets Vishy touches upon with characteristic wit, easy wisdom and disarming candour in this expanded edition of his critically acclaimed memoir, a delightful and invaluable exploration into the self that will thrill, inspire and motivate readers as few books have done before.

Possible Minds
Artificial Intelligence By Example
An Essay on the Pain of Playing Video Games
Machines that Think
The Quest for Artificial Intelligence--and Where It's Taking Us Next
Building Artificial Intelligence We Can Trust
A Personal Inquiry into the History and Prospects of Artificial Intelligence

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. Artificial Intelligence (AI), when incorporated with machine learning and deep learning algorithms, has a wide variety of applications today. This book focuses on the implementation of various elementary and advanced approaches in AI that can be used in various domains to solve real-time decision-making problems. The book focuses on concepts and techniques used to run tasks in an automated manner. It discusses computational intelligence in the detection and diagnosis of clinical and biomedical images, covers the automation of a system through machine learning and deep learning approaches, presents data analytics and mining for decision-support applications, and includes case-based reasoning, natural language processing, computer vision, and AI approaches in real-time applications. Academic scientists, researchers, and students in the various domains of computer science engineering, electronics and communication engineering, and information technology, as well as industrial engineers, biomedical engineers, and management, will find this book useful. By the end of this book, you will understand the fundamentals of AI. Various case studies will develop your adaptive thinking to solve real-time AI problems. Features Includes AI-based decision-making approaches Discusses computational intelligence in the detection and diagnosis of clinical and biomedical images Covers automation of systems through machine learning and deep learning approaches and its implications to the real world Presents data analytics and mining for decision-support applications Offers case-based reasoning Pulitzer Prize-winning author and astronomer Carl Sagan imagines the greatest adventure of all—the discovery of an advanced civilization in the depths of space. In December of 1999, a multinational team journeys out to the stars, to the most awesome encounter in human history. Who—or what—is out there? In Cosmos, Carl Sagan explained the universe. In Contact, he predicts its future—and our own.
Grokking Artificial Intelligence Algorithms
Designing Next-Generation Machine Intelligence Algorithms