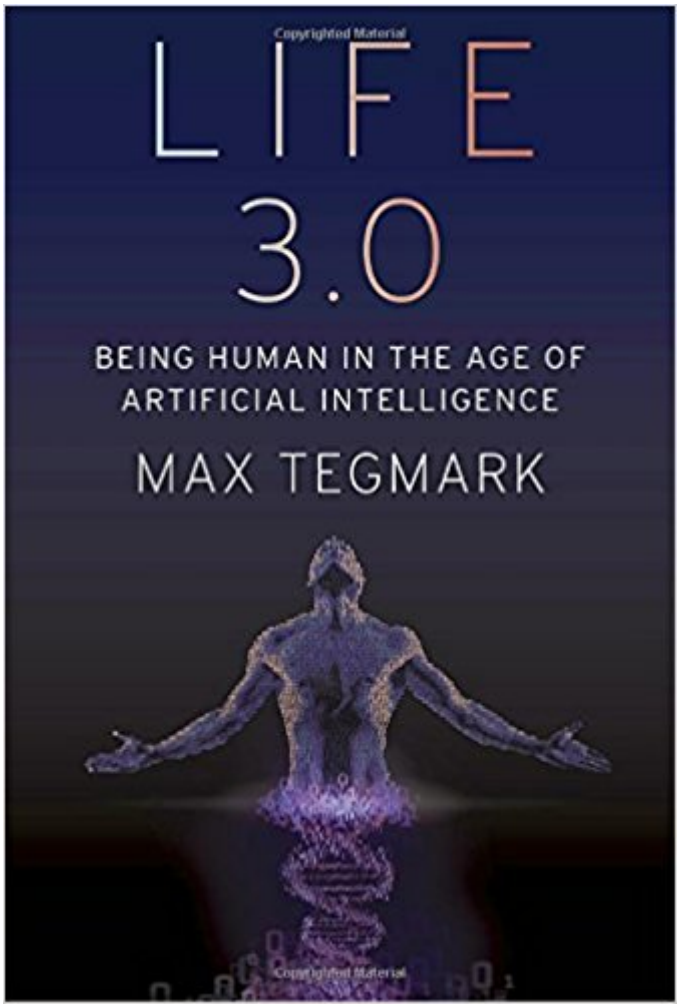
Life 3.0: Being Human In The Age Of Artificial Intelligence



Synopsis

How will Artificial Intelligence affect crime, war, justice, jobs, society and our very sense of being human? The rise of AI has the potential to transform our future more than any other technologyâ ”and thereâ ™s nobody better qualified or situated to explore that future than Max Tegmark, an MIT professor whoâ ™s helped mainstream research on how to keep AI beneficial. Â How can we grow our prosperity through automation without leaving people lacking income or purpose? What career advice should we give todayâ ™s kids? How can we make future AI systems more robust, so that they do what we want without crashing, malfunctioning or getting hacked? Should we fear an arms race in lethal autonomous weapons? Will machines eventually outsmart us at all tasks, replacing humans on the job market and perhaps altogether? Will AI help life flourish like never before or give us more power than we can handle? Â What sort of future do you want? This book empowers you to join what may be the most important conversation of our time. It doesnâ ™t shy away from the full range of viewpoints or from the most controversial issuesâ ”from superintelligence to meaning, consciousness and the ultimate physical limits on life in the cosmos.

Book Information

Hardcover: 384 pages

Publisher: Knopf (August 29, 2017)

Language: English

ISBN-10: 1101946598

ISBN-13: 978-1101946596

Product Dimensions: 6.5 x 1.3 x 9.7 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

Average Customer Review: 4.4 out of 5 stars 17 customer reviews

Best Sellers Rank: #84 in Books (See Top 100 in Books) #1 inÂ Books > Computers & Technology > Computer Science > AI & Machine Learning #1 inÂ Books > Textbooks > Business & Finance #2 inÂ Books > Computers & Technology > Computer Science > Robotics

Customer Reviews

â œOriginal, accessible, and provocativeâ |.Tegmark successfully gives clarity to the many faces of AI, creating a highly readable book that complementsÂ The Second Machine Ageâ ™s economic perspective on the near-term implications of recent accomplishments in AI and the more detailed analysis of how we might get from where we are today to AGI and even the superhuman AI inÂ Superintelligenceâ |. At one point, Tegmark quotes Emerson: â ˆLife is a journey, not a

destination.â ™ The same may be said of the book itself. Enjoy the ride, and you will come out the other end with a greater appreciation of where people might take technology and themselves in the years ahead.â •Â â ”Science"In [Tegmark's] magnificent brain, each fact or idea appears toÂ slip neatly into its appointed place like another little silver globe in an orrery the size of the universe. There are spaces for Kant, Cold War historyÂ and Dostoyevsky, for the behaviour of subatomic particles and the neuroscience of consciousness....Tegmark describes the present, near-future and distant possibilities of AI through a series of highly original thought experiments....Tegmark is not personally wedded to any ofÂ these ideas. He asks only that his readers make up their own minds. In the meantime, he has forged a remarkable consensus on the need for AIÂ researchers to work on the mind-bogglingly complex task of building digital chains that are strong and durable enough to hold a superintelligentÂ machine to our bidding....This is a rich and visionary book and everyone should read it."Â â ”The Times (UK)â œThis is a compelling guide to the challenges and choices in our quest for a great future of life, intelligence and consciousnessâ ”on Earth and beyond.â • â ”Elon Musk, Founder, CEO and CTO of SpaceX and co-founder and CEO of Tesla Motorsâ œAll of usâ ”not only scientists, industrialists and generalsâ ”should ask ourselves what can we do now to improve the chances ofÂ reaping the benefits of future AI and avoiding the risks. This is the most important conversation of our time, and Tegmarkâ ™s thought-provokingÂ book will help you join it.â • â ”ProfessorÂ Stephen Hawking,Â Director of Research, Cambridge Centre for Theoretical CosmologyÂ â œTegmarkâ ™s new book is a deeply thoughtful guide to the most important conversation of our time, about how to create a benevolent future civilization as weÂ merge our biological thinking with an even greater intelligence of our own creation.â • â ”Ray Kurzweil, Inventor, Author and Futurist, author ofÂ The Singularity is NearÂ andÂ How to Create a Mindâ œBeing an eminent physicist and the leader of the Future of Life Institute has given Max Tegmark a uniqueÂ vantage point from which to give the reader an inside scoop on the most important issue of our time, in a way thatÂ isÂ approachable without being dumbed down.â • â ”Jaan Tallinn, co-founder of Skype Â â œThis is an exhilarating book that will change the way we think about AI, intelligence, and the future of humanity.â • â ”Bart Selman, Professor of Computer Science, Cornell Universityâ œThe unprecedented power unleashed by artificial intelligence means the next decade could be humanityâ ™s bestâ ”or worst. Â Tegmark has written the most insightful and just plain fun exploration of AIâ ™s implicationsÂ that Iâ ™ve ever read. If you havenâ ™t been exposed to Tegmarkâ ™s joyful mind yet, youâ ™re in for a huge treat.â • â ”ProfessorÂ Erik Brynjolfsson, Director of the MIT Initiative on the Digital Economy and co-author of The Second Machine Ageâ œTegmark seeks to facilitate a much wider conversation about what kind of future

we, as a species, would want to create. Though the topics he coversâ ”AI, cosmology, values, even the nature of conscious experienceâ ”can be fairly challenging, he presents them in an unintimidating manner that invites the reader to form her own opinions.â • â ”Nick Bostrom, Founder of Oxfordâ ™s Future of Humanity Institute, author of Superintelligence"I was riveted by this book. The transformational consequences of AI may soon be upon usÂ- â ”but will they be utopian or catastrophic? The jury is out, but this enlightening, lively and accessible book by aÂ distinguished scientistÂ helps us to assess the odds."Â â ”Professor Martin Rees, Astronomer Royal, cosmology pioneer, author ofÂ Our Final HourÂ â œExhilaratingâ |.MIT physicist Tegmark surveys advances in artificial intelligence such as self-driving cars and Jeopardy-winning software, but focuses on the looming prospect of â œrecursive self-improvementâ •â ”AI systems that build smarter versions of themselves at an accelerating pace until their intellects surpass ours. Tegmarkâ ™s smart, freewheeling discussion leads to fascinating speculations on AI-based civilizations spanning galaxies and eonsâ |.Engrossing.â • â ”Publishers Weekly

MAX TEGMARK is a professor of physics at MIT and the co-founder of the Future of Life Institute. Tegmark has been featured in dozens of science documentaries. His passion for ideas, adventure, and entrepreneurship is infectious.

The first chapter of TegmarkÃ¢Â Â™s new book is called Ã¢Â ÂœWelcome to the most important conversation of our time,Ã¢Â Â• and thatÃ¢Â Â™s exactly what this book is. Before diving into the book, a few words about why this conversation is so important and why Tegmark is a central agent helping make it happen and, through the book, the perfect guide.Have you notice how you donÃ¢Â Â™t Ã¢Â ÂœsolveÃ¢Â Â• CAPTCHAs (Completely Automated Public Turing test to tell Computers and Humans Apart) anymore? ThatÃ¢Â Â™s because computers now can. Artificial Intelligence, from being a fairly niche area of mostly academic study a decade ago has exploded in the last five years. Much more quickly than many anticipated, machine learning (a subset of AI) systems have defeated the best human Go players, are piloting self-driving cars, usefully if imperfectly translating documents, labeling your photos, understanding your speech, and so on. This has led to huge investment in AI by companies and governments, with every sign that progress will continue. This book is about what happens if and when it does.But why hear about it from Tegmark, an accomplished MIT physicists and cosmologist, rather than (say) an AI researcher? First, Tegmark has over the past few years *become* an AI researcher, with 5 published technical papers in the past two years. But heÃ¢Â Â™s also got a lifetime of experience thinking carefully,

rigorously, generally (and entertainingly to boot) about the Ã¢Â Âœbig pictureÃ¢Â Â• of what is possible, and what is not, over long timescales and cosmic distances (see his last book!) Ã¢Â Â“ which most AI researchers do not. Finally, he's played an active and very key role (as you can read about in the bookÃ¢Â Â™s epilogue) in actually creating conversation and research about the impacts and safety of AI in the long-term. I donÃ¢Â Â™t think anyone is more comprehensively aware of the full spectrum of important aspects of the issue.So now the book. Chapter 1 lays out why AI is suddenly on everyoneÃ¢Â Â™s radar, and very likely to be extremely important over the coming decades, situating present-day as a crucial point within the wider sweep of human and evolutionary history on Earth. Chapter 2 takes the question of Ã¢Â Âœwhat is intelligence?Ã¢Â Â• and abstracts it from its customary human application, to Ã¢Â Âœwhat is intelligence *in general*?Ã¢Â Â• How can we define it in a useful way to cover both biological and artificial forms, and how do these tie to a basic understanding of the physical world? This lays the groundwork for the question of what happens as artificial intelligences grow ever more powerful. Chapter 3 addresses this question in the near future: what happens as more and more human jobs can be done by AIs? What about AI weapons replacing human-directed ones? How will be cope when more and more decision are made by AIs what may be flawed or biased? This is a about a lot of important changes occurring *right now* to which society is, for the most part, asleep at the wheel. Chapter 4 gets into what is exciting Ã¢Â Â“ and terrifying Ã¢Â Â“ about AI: as a designed intelligence, it can in principle *re*design itself to get better and better, potentially on a relatively short timescale. This raises a lot of rich, important, and extremely difficult questions that not that many people have thought through carefully (another in-print example is the excellent book by Bostrom). Chapter 5 discusses where what happens to humans as a species after an Ã¢Â Âœintelligence explosionÃ¢Â Â• takes place. Here Tegmark is making a call to start thinking about where we want to be, as we may end up somewhere sooner than we think, and some of the possibilities are pretty awful. Chapter 6 exhibits TegmarkÃ¢Â Â™s unique talent for tackling the big questions, looking at the *ultimate* limits and promise of intelligent life in the universe, and how stupefyingly high the stakes might be fore getting the next few decades right. ItÃ¢Â Â™s both a sobering and an exhilerating prospect. Chapters 7 and 8 then dig into some of the deep and interesting questions about AI: what does it mean for a machine to have Ã¢Â ÂœgoalsÃ¢Â Â•? What are our goals as individuals and a society, and how can we best aim toward them in the long term? Can a machine we design have consciousness? What is the long-term future of consciousness? Is there a danger of relapsing into a universe *without* consciousness if we arenÃ¢Â Â™t careful? Finally, an epilogue describes TegmarkÃ¢Â Â™s own experience Ã¢Â Â“

which IÃ¢Â Â™ve had the privilege to personally witness Ã¢Â Â“ as a key player in an effort to focus thought and effort on AI and its long-term implications, of which writing this book is a part. (And I should also mention the prologue, which gives an fictional but less *science*fictional depiction of an artificial superintelligence being used by a small group to seize control of human society.The book is written in a very lively and engaging style. The explanations are clear, and Tegmark develops a lot of material at a level that is understandable to a general audience, but rigorous enough to give readers a real understanding of the issues relevant to thinking about the future impact of AI. There are a lot of news ideas in the book, and although it is sometimes written in a breezy and engaging style, that belies a lot of careful thinking about the issues.ItÃ¢Â Â™s possible that real, general artificial intelligence (AGI) is 100 or more years away, a problem for the next generation, with large but manageable effects of Ã¢Â Âœnarrow Ã¢Â Â• AI to deal with over a span of decades. But itÃ¢Â Â™s also quite possible that itÃ¢Â Â™s going to happen 10, 15, 20, or 30 years from now, in which case society is going to have to make a lot of very wise and very important (literally of cosmic import) decisions very quickly. ItÃ¢Â Â™s important to start the conversation now, and thereÃ¢Â Â™s no better way.

TegmarkÃ¢Â Â™s new book is a really excellent introduction for anyone who wants to understand why AI researchers are both excited and worried about the rise of artificial intelligence. Most of the other books IÃ¢Â Â™ve read about AI are either more technical, talk about the impact of AI over the short-term, or are already outdated. AI is developing at a rapid pace right now, and itÃ¢Â Â™s hard for most people to wrap their heads around how dramatically this could impact society. In fact, many people I talk to donÃ¢Â Â™t even know what AI stands for. Tegmark explains AI in easily accessible language with fun personal stories. He talks about what breakthroughs have occurred recently that are leading to such rapid development, as well as how we can prepare for jobs in the coming decades. But then he goes on to look at how AI could impact humanity in 1,000 years, in 10,000 years, and even further into the future. And then there are the chapters on space exploration and consciousness, which Tegmark obviously had a lot of fun writing. Throughout the book, he asks two important questions: How do you want AI to impact your life? How do you think AI should impact future society? These are questions we all need to consider if we want to make sure AI helps the many and not the few, and TegmarkÃ¢Â Â™s book is a great jumping off point.

Tegmark brings a refreshing perspective to what likely is one of, if not the, most important conversation of our time. After setting the stage and clearing the field of common myths and

misconceptions regarding AI, Tegmark methodically moves through the emergence of intelligence in our cosmos some 4 billion years ago to the implications of what he calls "Life 3.0," entities which can both redesign their hardware and software.Couching the emergence and development of both consciousness and intelligence within the more cosmological world view of a physicist offers a truly inspiring narrative. Moving through hundreds, thousands, and billions of years with Tegmark solidifies the development of intelligence as a cosmological phenomenon which you come to realize that you yourself are a part of. Learning how intelligence is an emergent expression of more basic physical laws feels, at least to me, thoroughly grounding and deeply reestablishing of a real connection between me and the world.Chapters 6, 7, and 8 are my favorite and cover territory seldom explored in similar literature. In 6, he explores the capacity of artificial superintelligence to colonize the universe and the implications for the about 10 billion galaxies he estimates might be able to be colonized by it. Chapter 7 explores the emergence and evolution of goals at different levels of reality, ranging from thermodynamics to wet and squishy intelligences like you and me. In chapter 8, Tegmark explores consciousness and the mysteries and questions surrounding it, a topic I believe deserves far more attention than it is currently getting.This book is aimed at a wider audience than BostromÃ¢Â Â™s Superintelligence, but even if you are an avid reader of all that concerns technology, the deep future, and AI, I'm certain you'll find novel content and an enjoyable recontextualization of AI from the perspective a physicist. On a less serious note, I really love that the author summarizes the most important points at the end of each chapter. It helps me remember everything. :p

A book to read and reread, to discuss, to consider. The author invites his reader to develop an informed opinion about the role of AI in the future.Well presented by an author who is not just concerned about the consciousness of artificial intelligence, but humanity's consciousness of how its world is changing.Challenging, informative and hopeful, the book enables the reader to boldly go where he or she may never have gone before.

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