

## Neil Jacobstein

Chair of the Artificial Intelligence and Robotics Track at Singularity University

**Breakthroughs and Applications of Artificial Intelligence and Robotics.** Jacobstein explains how machine learning and robotics are advancing exponentially as increasing computing power, improved algorithms, and access to massive amounts of data fuel revolutions in information and materials processing. He discusses the major new developments in artificial intelligence and robotics, including:

- Deep learning
- Reinforcement learning with human feedback
- Generative AI from text, images, video, speech, and multiple modalities
- Autonomous vehicles
- Robotic surgery
- Drones
- Personal assistants
- Drug discovery, and
- Atomically precise manufacturing

Drawing on decades of AI project experience, Jacobstein provides a custom framework for the successful business applications of these technologies. He discusses the technical, business, environmental, and ethical implications of AI and robotics. With a delivery that is both engaging and accessible, including to people who are beginners in science and technology, Jacobstein covers major technical opportunities and implications for a wide variety of established industries and entrepreneurial startups. He also addresses how AI and robotics are expected to transform the creation and distribution of wealth and jobs over the coming years, and what we can do to prepare proactively.

**The Future of Exponential Technology.** From artificial intelligence and 5G to quantum computing and nanotechnology, Jacobstein examines the new technologies coming our way. He offers a concise, no-fluff look at how they will affect the ways we work and live. Distinguishing real gamechangers from marketing hype, Jacobstein addresses the business, technical, and ethical implications of exponential technologies that double in price performance every two years. His presentations are continuously updated with the latest research breakthroughs and commercial technology. Each talk is customized to the audience at hand with thoughtful looks at what we can expect 5, 10, and 15 years out. Jacobstein highlights what business audiences can learn about innovation from the disruptive technology accelerating all around them and helps audience members prepare for changes so that they can capture opportunities and avoid getting left behind in the digital dust.

**The Future of Work.** Jacobstein captivates audiences through an easy-to-understand and engaging briefing on the latest improvements in AI and Robotics and the resulting effects on jobs, industries, and the economy. Unlike the movement of farm workers into factories, and factory workers into white collar office jobs, Jacobstein provides evidence that this time, the pattern may be different. Both white collar and blue-collar jobs will be affected. He predicts we can look forward to millions of new jobs, but that the real issue will be the ratio of new jobs to jobs displaced by machine learning. Jacobstein explains the critical importance of education in science, technology, ethics, critical thinking, art, design, math, and machine learning. He addresses the merits and potential incentive pitfalls of universal basic income, and emphasizes what businesses need to know to increase productivity and profitability while mitigating social problems. Jacobstein provides an eye-opening look at the future of AI, robotics, and the accelerating business environment that includes opportunities for both disruption and real abundance.

**AI Ethics: Privacy, Bias, and Trust in Machine Learning.** Can we trust our technology? There is no doubt that AI will change human life in profoundly meaningful and positive ways. But it won't come without a price: rapid training, displacement, loss of privacy, and the effective handling of many new ethical questions. Here, Jacobstein addresses what AI means for jobs, new business incentives, the way we define ourselves, our self-esteem, the distribution of wealth, and our limited sense of what is possible. He provides vivid and compelling examples of AI applications utilized in the market today and addresses specific and practical AI insights culled from a wide variety of industries. Jacobstein shares his expertise and passion for AI, highlighting how it can be combined with other technologies to generate vast new wealth and potentially solve some of humanity's critical grand challenges. Finally, he facilitates an interactive discussion on the principles necessary to use this powerful technology responsibly and ethically, including near-term issues like privacy, bias, trust, and accountability, and longer-term

issues including alignment with potential superintelligences. Jacobstein communicates the very real possibility of our creating happier, healthier, and more secure lives in the future.

**Finance and Investment in the AI Revolution.** Jacobstein has had over 50 large banks as customers. He provides a framework for thinking about what is driving the AI Revolution, and how it is affecting Fintech and investment opportunities. He looks at what specific roles AI can play in finance and the bottom-line value it can add. Drawing on case studies of companies already using this revolutionary technology, Jacobstein discusses the task areas where companies are using AI to deliver entirely new digital financial products and services. He also addresses the implications for jobs, business disruption, cryptocurrencies, and ethics — as businesses plan to capture the benefits and reduce the risks of this rapidly evolving technology.

**Autonomous Vehicles: An Imperfect Way to Save Millions of Lives.** Jacobstein covers the possibilities and transformations brought on by autonomous cars in everyday life. Reviewing both the technology that makes these vehicles possible as well as the implications of driverless cars, Jacobstein acknowledges the technology is currently imperfect, but makes the case for a world in which millions of lives are eventually saved by AI-powered vehicles. Plus, he discusses the implications of autonomous vehicles for other aspects of our lives, including: our use of commuting time, optional car ownership, reduced demand for parking, changes in city planning and real estate values, reduced pollution, and the production of plug-in hybrid and electric cars. This is a powerful, evidence-based look at a nascent technology on the verge of ubiquity.

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