

MIT Industrial Liaison Program Faculty Knowledgebase Report

2019 MIT Citi Conference in NYC with Keynotes from MIT Faculty

October 31, 2019 8:15 am - 4:00 pm

8:15am Registration and Breakfast

9:00am Citi Welcome
Deirdre Dunn
Managing Director, Co-Head of Global Rates, [Citi](#)



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Managing Director, Co-Head of Global Rates
[Citi](#)

Deirdre Dunn is currently a Co-Head of Global Rates. In this capacity, she oversees the North American sales, trading, and origination businesses of Citi's Global Rates franchise. Dunn is a member of Citi's Pension Plan Investment Committee.

Prior to this appointment, Dunn was running North American G10 Rates Markets, responsible for the Trading, Structuring and North American Distribution of G10 Interest Rate Products. She joined Citi in July 2011 to run the mortgage pass through trading desk. Prior to joining Citi, she ran the US Interest Rate Swaps Trading Desk for Barclays Capital. She also spent two years with Barclays Capital in London, managing the long end of European Government Bond business, and then building out a cross currency Sovereign Supranational and Agency Trading business.

Dunn began her career in 1999 at Goldman Sachs. In 10 years there and at Lehman Brothers, she traded a variety of different residential and commercial mortgage products, ultimately running the pass through trading business.

She holds a BS in chemical engineering from the Massachusetts Institute of Technology (MIT).

Dunn is a member of the Treasury Borrowing Advisory Committee of the Securities Industry and Financial Markets Association, which is an advisory committee governed by federal statute that meets quarterly with the Treasury Department. The Borrowing Committee presents their observations to the Treasury Department on the overall strength of the U.S. economy as well as providing recommendations on a variety of technical debt management issues. She is a member of the Treasury Market Practices Group (TMPG), which is sponsored by the Federal Reserve Bank of New York. She is a member of the Executive Council of the Susan F. Smith Center for Women's Cancers at Dana Farber. Dunn is also a member of the Foundation of Paul Taylor's American Modern Dance.

9:15am

MIT Welcome
Karl Koster
Executive Director, MIT Corporate Relations
Director, Alliance Management
MIT Office of Strategic Alliances & Technology Transfer



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Karl Koster is the Executive Director of MIT Corporate Relations. MIT Corporate Relations includes the MIT Industrial Liaison Program and MIT Startup Exchange.

In that capacity, Koster and his staff work with the leadership of MIT and senior corporate executives to design and implement strategies for fostering corporate partnerships with the Institute. Koster and his team have also worked to identify and design a number of major international programs for MIT, which have been characterized by the establishment of strong, programmatic linkages among universities, industry, and governments. Most recently these efforts have been extended to engage the surrounding innovation ecosystem, including its vibrant startup and small company community, into MIT's global corporate and university networks.

Koster is also the Director of Alliance Management in the Office of Strategic Alliances and Technology Transfer (OSATT). OSATT was launched in Fall 2019 as part of a plan to reinvent MIT's research administration infrastructure. OSATT develops agreements that facilitate MIT projects, programs and consortia with industrial, nonprofit, and international sponsors, partners and collaborators.

He is past chairman of the University-Industry Demonstration Partnership (UIDP), an organization that seeks to enhance the value of collaborative partnerships between universities and corporations.

He graduated from Brown University with a BA in geology and economics, and received an MS from MIT Sloan School of Management. Prior to returning to MIT, Koster worked as a management consultant in Europe, Latin America, and the United States on projects for private and public sector organizations.

9:25am

Forces Shaping the Future of the Internet
David Clark

Senior Research Scientist
Co-Director, MIT Communications Futures Program (CFP)
MIT Computer Science and Artificial Intelligence Laboratory

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David Clark is a Senior Research Scientist at the MIT Computer Science and Artificial Intelligence Laboratory, where he has worked since receiving his Ph.D. there in 1973. Since the mid 70s, Dr. Clark has been leading the development of the Internet; from 1981-1989 he acted as Chief Protocol Architect in this development and chaired the Internet Activities Board. His current research looks at re-definition of the architectural underpinnings of the Internet and the relation of technology and architecture to economic, societal and policy considerations. He is helping the U.S. National Science foundation organize their Future Internet Design program. Dr. Clark is past chairman of the Computer Science and Telecommunications Board of the National Academies and has contributed to a number of studies on the societal and policy impact of computer communications. He is co-director of the MIT Communications Futures Program, a project for industry collaboration and coordination along the communications value chain.

[View full bio](#)

In the early days of the Internet, technical innovation shaped its future. Today, issues of economics, market dynamics, incentives, and some fundamental aspects of networked systems shape the future. This talk will summarize eleven forces that are shaping the future of the Internet, and make an argument that we are at a point of inflection in the character of the Internet, as profound as the change in the 1990's when the Internet was commercialized.

10:05am

Top Ten "Big Data" Blunders
Michael Stonebraker
Adjunct Professor, [MIT CSAIL](#)



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Adjunct Professor
[MIT CSAIL](#)

Mike Stonebraker is an adjunct professor at MIT CSAIL and a database pioneer who specializes in database management systems and data integration. He was awarded the 2014 A.M. Turing Award (known as the "Nobel Prize of computing") by the Association for Computing Machinery for his "fundamental contributions to the concepts and practices underlying modern database systems as well as their practical application through nine start-up companies that he has founded."

Professor Stonebraker has been a pioneer of database research and technology for more than 40 years, and is the author of scores of papers in this area. Before joining CSAIL in 2001, he was a professor of computer science at the University of California Berkeley for 29 years. While at Berkeley, he was the main architect of the INGRES relational DBMS; the object-relational DBMS POSTGRES; and the federated data system Mariposa. After joining MIT, he was the principal architect of C-Store (a column store commercialized by Vertica), H-Store, a main memory OLTP engine (commercialized by VoltDB), and SciDB (an array engine commercialized by Paradigm4). In addition, he has started three other companies in the big data space, including Tamr. He also co-founded the Intel Science and Technology Center for Big Data, based at MIT CSAIL.

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This talk (with apologies to David Letterman) will present the top ten big data mistakes witnessed in the last decade or so. These range from "not planning to move everything to the cloud" to "believing that a data lake will solve all your problems." Also included is an eleventh blunder, which effectively means "working for a company that is not focused on avoiding these blunders."

10:45am

Networking Break

11:05am

Interpretable AI and its Applications in Financial Services
Dimitris Bertsimas
Boeing Professor of Operations Research
Co-Director, Operations Research Center (ORC)
Faculty Director, Master of Business Analytics, [MIT Sloan School of Management](#)



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Dimitris Bertsimas is the Boeing Professor of Operations Research, the codirector of the Operations Research Center, and faculty director of the Master of Business analytics at MIT. His research interests include optimization, machine learning and applied probability and their applications in health care, finance, operations management, and transportation. Bertsimas has coauthored more than 200 scientific papers and four graduate level textbooks. He is the editor in Chief of INFORMS Journal of Optimization. He has supervised 67 doctoral students and is currently supervising 25 others. Bertsimas is a member of the National Academy of Engineering, an INFORMS fellow, and has received numerous prestigious research and teaching awards. He holds an SM in applied mathematics and a PhD in operations research from MIT.

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This talk introduces a new generation of machine learning methods that provide state of the art performance and are very interpretable. Optimal classification (OCT) and regression (ORT) trees are introduced for prediction and prescription with and without hyperplanes. It will be shown that (a) Trees are very interpretable, (b) They can be calculated in large scale in practical times, and (c) In a large collection of real world data sets, they give comparable or better performance than random forests or boosted trees. Their prescriptive counterparts have a significant edge on interpretability and comparable or better performance than causal forests. These optimal trees with hyperplanes have at least as much modeling power as (feedforward, convolutional and recurrent) neural networks and comparable performance in a variety of real world data sets. Finally, a variety of optimal trees applications in financial services will be discussed.

Startup Lightning Talks Part I

Christina Qi
CEO, [Elisfy](#)



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CEO
[Elisfy](#)

Christina Qi serves as CEO of Elisify, the first modern data marketplace. Previously, she founded Domeyard LP, a hedge fund known for its focus on high frequency trading. She started Domeyard 8 years ago with \$1000 in savings. Domeyard trades up to \$1 billion USD per day. Her company's story has been featured on the front page of Forbes and Nikkei, and quoted in the Wall Street Journal, Bloomberg, CNN, NBC, and the Financial Times. Christina is a contributor to the World Economic Forum's research on AI in finance. She is a visiting lecturer at MIT, including Nobel Laureate Robert Merton's "Retirement Finance" class since 2014, and alongside President Emerita Susan Hockfield and Dean David Schmittlein in 2019. Christina teaches Domeyard's case study at Harvard Business School and other universities.

Christina was elected as a Member of the MIT Corporation, MIT's Board of Trustees. She was elected Co-Chair of the Board of Invest in Girls in 2019. Christina also sits on the Board of Directors of The Financial Executives Alliance (FEA) Hedge Fund Group, drives entrepreneurship efforts at the MIT Sloan Boston Alumni Association (MIT SBAA), and serves on U.S. Non-Profit Boards Committee of 100 Women in Finance. Her work in finance earned her a spot on the Forbes 30 Under 30 and Boston Business Journal 40 Under 40 lists. She holds an S.B. in Management Science from MIT and is a CAIA Charterholder.

Jim Crowley
Cofounder & CEO, [Forge.AI](#)



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Jim Crowley is cofounder and CEO of Forge.AI, a cloud based activity based intelligence platform. In real-time, Forge.AI captures the global flow of unstructured data and transforms it into enriched, intelligently augmented and structured data designed for computationally enhanced and quantitative based decision-making processes associated with risk modeling, seeking alpha and other forms of advanced modeling activities.

Prior to Forge.AI, Crowley led and helped build, several technology companies from startup through either an IPO or their acquisition by public companies. His key relevant experiences include: Skyhook Wireless, Inc. (CEO - Geo location - acquired by Liberty Media), Turbine (CEO - Digital Entertainment - acquired by Warner Bros.), m-Qube (COO – Mobile - acquired by VeriSign) and Network Plus, Inc. (COO - Data / Communications – took Public on NASDAQ).

[Jana Eggers](#)
CEO, [Nara Logics](#)



Jana Eggers
CEO
[Nara Logics](#)

Jana Eggers is CEO of the neuroscience-inspired artificial intelligence platform company, Nara Logics. Eggers is an experienced tech exec focused on inspiring teams to build great

Startup Lightning Talks Part II
Kurt Rohloff
Cofounder & CTO, [Duality Technologies](#)



Kurt Rohloff
Cofounder & CTO
[Duality Technologies](#)

Kurt Rohloff is the cofounder and CTO of Duality Technologies, a start-up commercializing privacy-preserving data science technologies. He is also tenured as an associate professor of computer science at NJIT in Newark. He is a DARPA Director's Fellowship Awardee and has been the PI on several DARPA and IARPA projects. Prior to Duality, Rohloff worked for nine years in the US defense industry as a senior scientist in the Distributed Systems research group at Raytheon BBN Technologies. His areas of technical expertise include distributed information management, secure computing, and high assurance software design. He is the cofounder of the PALISADE open-source lattice encryption library. Rohloff received his bachelor's degree in electrical engineering from Georgia Tech and his master's and PhD in electrical engineering from the University of Michigan.

Annika Goldman
Chief Operating Officer, [Canopy](#)



Annika Goldman
Chief Operating Officer
[Canopy](#)

Annika Goldman is COO of Canopy, where she is responsible for the direction and execution of the overall business strategy for the company. Goldman also oversees all product decisions including Canopy-owned experiences as well as the company's enterprise offerings. She is also charged with running Canopy's financial operations including budgeting and fundraising.

Prior to Canopy, Goldman held a number of roles at Spotify starting as a legal counsel and later serving as Director of Music Publishing where she ran all business operations for the music publishing side of the organization.

Before joining Spotify, Goldman was an associate at Cooley, LLP. She clerked for a Federal District Court in the United States and worked in Kosovo to help establish the Constitutional Court of Kosovo. Goldman earned her JD from Harvard Law School and holds a BA from Yale University.

Dan Sturtevant
Cofounder & CEO, [Silverthread](#)



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[Silverthread](#)

Dan Sturtevant cofounded Silverthread in 2013 to commercialize 15 years of Harvard and MIT research on improving business outcomes for complex software projects. From 2012 through 2015, he researched the empirical foundations of Silverthread's predictive analytics for design quality and software economics. Sturtevant holds a BS in computer engineering from Lehigh University and an MS in engineering and management and PhD in engineering systems from MIT.

Nick Gold

12:30pm

Lunch with Startup Exhibit

1:30pm

More From Less: How We Innovated Our Way Into a Healthier Relationship with Our Planet
Andrew McAfee
Co-Director & Tech for Good Research Group Lead, [MIT Sloan School of Management](#)



Andrew McAfee
Co-Director & Tech for Good Research Group Lead
[MIT Sloan School of Management](#)

Andrew McAfee is the Co-Director of the IDE and a Principal Research Scientist at the MIT Sloan School of Management,

His research investigates how information technology changes the way companies perform, organize themselves, and compete. At a higher level, his work also focuses on how computerization affects competition, society, the economy, and the workforce. In addition to having numerous papers published, McAfee also writes a widely read blog, which is at times one of the 10,000 most popular in the world. He is the author or co-author of more than 100 articles, case studies and other materials for students and teachers of technology. Prior to joining MIT Sloan, McAfee was a professor at Harvard Business School. He has also served as a fellow at the Berkman Center for Internet and Society at Harvard Law School. McAfee received his doctorate from Harvard Business School, and completed two Master of Science and two Bachelor of Science degrees at MIT. He speaks frequently to both academic and industry audiences, and has taught in executive education programs around the world.

[View full bio](#)

Want some *good* news about the environment? In America, we have finally learned to grow our economy while taking less from the Earth year after year: less water, timber, and metal; fewer minerals and resources; even less energy. This talk is a show and tell about this profound change. Andy McAfee will show the evidence that we've started getting more from less and tell how it happened. The unlikely heroes of the tale are the cost pressures that come from intense competition and powerful digital tools that reduce the need for resources. In short, prices and processors are now letting us tread more lightly on the Earth. The story is full of surprises and also insights. In particular, it gives us a playbook for dealing with the major challenges still ahead of us: global warming, pollution, and species loss.

2:10pm

Gordon Gekko and the Cult and Culture of Finance
Andrew W. Lo

Charles E and Susan T Harris Professor of Finance
Director, Laboratory for Financial Engineering
MIT Sloan School of Management



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Director, Laboratory for Financial Engineering
MIT Sloan School of Management

Andrew W. Lo is the Charles E. and Susan T. Harris Professor, a Professor of Finance, and the Director of the Laboratory for Financial Engineering at the MIT Sloan School of Management.

His current research spans five areas: evolutionary models of investor behavior and adaptive markets, systemic risk and financial regulation, quantitative models of financial markets, financial applications of machine-learning techniques and secure multi-party computation, and healthcare finance. Recent projects include: deriving risk aversion, loss aversion, probability matching, and other behaviors as emergent properties of evolution in stochastic environments; constructing new measures of systemic risk and comparing them across time and systemic events; applying spectral analysis to investment strategies to decompose returns into fundamental frequencies; and developing new statistical tools for predicting clinical trial outcomes, incorporating patient preferences into the drug approval process, and accelerating biomedical innovation via novel financing structures.

Lo has published extensively in academic journals (see <http://alo.mit.edu>) and his most recent book is *Adaptive Markets: Financial Evolution at the Speed of Thought*. His awards include Batterymarch, Guggenheim, and Sloan Fellowships; the Paul A. Samuelson Award; the Eugene Fama Prize; the IAFE-SunGard Financial Engineer of the Year; the Global Association of Risk Professionals Risk Manager of the Year; the Harry M. Markowitz Award; the Managed Futures Pinnacle Achievement Award; one of TIME's "100 most influential people in the world"; and awards for teaching excellence from both Wharton and MIT. His book *Adaptive Markets* has also received a number of awards, listed here. He is a Fellow of Academia Sinica; the American Academy of Arts and Sciences; the Econometric Society; and the Society of Financial Econometrics.

Lo is also a principal investigator at the MIT Computer Science and Artificial Intelligence Laboratory, an affiliated faculty member of the MIT Department of Electrical Engineering and Computer Science, an external faculty member of the Santa Fe Institute, and a research associate of the National Bureau of Economic Research. He is a member of the New York Federal Reserve Board's Financial Advisory Roundtable, FINRA's Economic Advisory Committee, the National Academy of Sciences Board on Mathematical Sciences and Their Applications, Beth Israel Deaconess Medical Center's Board of Overseers, and the boards of Roivant Sciences and the Whitehead Institute for Biomedical Research.

Lo holds a BA in economics from Yale University and an AM and PhD in economics from Harvard University.

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Culture is a potent force in shaping individual and group behavior, yet it has received relatively little attention in the context of financial risk management and the recent financial crisis. In this talk, Professor Lo will present a brief overview of the role of culture and ethics according to psychologists, sociologists, and economists, and then propose a specific framework for analyzing culture in the context of financial practices and institutions in which three questions are addressed: (1) What is culture?; (2) Does it matter?; and (3) Can it be changed?

2:50pm

Networking Break

3:10pm

The Future of China's Growth Model

Yasheng Huang

Epoch Foundation Professor of Global Economics and Management, [MIT Sloan School of Management](#)



Yasheng Huang

Epoch Foundation Professor of Global Economics and Management

[MIT Sloan School of Management](#)

Yasheng Huang is the International Program Professor in Chinese Economy and Business and a Professor of Global Economics and Management at the MIT Sloan School of Management.

Professor Huang founded and runs the China Lab and the India Lab, which aim to help entrepreneurs in those countries improve their management skills. He is an expert source on international business, political economy, and international management. In collaboration with other scholars, Huang is conducting research on human capital formation in China and India, entrepreneurship, and ethnic and labor-intensive foreign direct investment (FDI). Prior to MIT Sloan, he held faculty positions at the University of Michigan and at Harvard Business School. Huang also served as a consultant to the World Bank.

His research has been profiled in many publications, including The Wall Street Journal, The Economist, Businessworld, Le Monde, the Economic Times, as well as in numerous Chinese publications. He also has contributed to the Financial Times, The New York Times, and Foreign Policy. Huang's published books include Inflation and Investment Controls in China (1996), FDI in China (1998), Selling China (2003), and Financial Reform in China (2005, co-edited with Tony Saich and Edward Steinfeld). His most recent book, Capitalism with Chinese Characteristics (2008), is based on detailed archival and quantitative evidence spanning three decades of reforms. Huang shows that private entrepreneurship, facilitated by financial liberalization and microeconomic flexibility, played a central role in China's economic miracle.

Huang has held or received prestigious fellowships, such as the National Fellowship at Stanford University and the Social Science Research Council-MacArthur Fellowship. He is a member of the Trust Center for MIT Entrepreneurship, a Fellow at the Center for Chinese Economic Research and the Center for China in the World Economy at Tsinghua University, a Fellow at the William Davidson Institute at Michigan Business School, and a World Economic Forum Fellow.

Huang holds a B.A. in government from Harvard College and a Ph.D. in government from Harvard University. He was appointed a full professor on July 1, 2009.

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This presentation will discuss both the achievements and challenges of China's growth model and argue that the current model is running into substantial headwinds.

3:50pm

Closing Remarks

Sandeep Arora

Managing Director, Global Head of FinTech & Innovation, [Citi Markets & Securities Services](#)



Sandeep Arora

Managing Director, Global Head of FinTech & Innovation

[Citi Markets & Securities Services](#)

Sandeep Arora is the Global Head of Fintech and Innovation for Citi Markets and Securities Services, responsible for managing the FinTech investment portfolio, CitiVelocity.com, Electronification, Data, BlockChain, and Regulatory initiatives. He also represents Citi at MIT's FinTech Alliance.

Sandeep has worked in Citi Markets since 2002, holding positions of COO of Citi Markets & Securities Services, COO of FICC, and COO/CFO of EM Sales & Trading.

Sandeep joined Citi in 1988, as a Management Associate, and has worked in a variety of positions in New York, London and India. His experiences at Citi during the period 1988-2002 have spanned Sales & Trading, Finance, Corporate & Investment Banking, Consumer Banking, Treasury and Operations & Technology.

Sandeep holds a bachelor degree in economics from Delhi University in 1986, and an MBA from Delhi University in 1988.

4:00pm

Adjournment