

Seminar Series (Online Zoom Webinar): Frontiers of Big Data, AI, and Analytics

We are pleased to welcome **Professor Cynthia Rudin (Duke University)** on **15 April 2021 9:00AM – 10:30AM (Australian Eastern Standard Time (GMT+10))**.

Discussion Theme: Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead



Professor Cynthia Rudin
(Professor of computer science, electrical and computer engineering, and statistical science at Duke University)

Abstract of talk: With widespread use of machine learning, there have been serious societal consequences from using black box models for high-stakes decisions, including flawed bail and parole decisions in criminal justice. Explanations for black box models are not reliable, and can be misleading. If we use interpretable machine learning models, they come with their own explanations, which are faithful to what the model actually computes. Cynthia will give several reasons why we should use interpretable models, the most compelling of which is that for high stakes decisions, interpretable models do not seem to lose accuracy over black boxes - in fact, the opposite is true, where when we understand what the models are doing, we can troubleshoot them to ultimately gain accuracy. More detailed information is available from Cynthia's work (click [here](#)) published at Nature: Machine Intelligence.

Short Bio: Cynthia Rudin (PhD. Princeton University) directs the Prediction Analysis Lab, whose main focus is in interpretable machine learning. She is also an associate director of the Statistical and Applied Mathematical Sciences Institute (SAMSI). Previously, Prof. Rudin held positions at MIT, Columbia, and NYU. She is a three-time winner of the INFORMS Innovative Applications in Analytics Award, was named as one of the "Top 40 Under 40" by Poets and Quants in 2015, and was named by Businessinsider.com as one of the 12 most impressive professors at MIT in 2015.

To join this event through Zoom, register your attendance from this link by NOON 14 April 2021 (Zoom link is provided 1 day prior to the event)

To register: click [here](#)

Unleashing ideas and insights for harnessing the successful future of business & society!

Co-organizers

Tomohiro Ando (Melbourne Business School, University of Melbourne)

Robert Kohn (UNSW Business School, University of New South Wales)

Valentin Zelenyuk (School of Economics, University of Queensland)

Recent events:

Discussion theme: **Can AI replace high-skilled workers?**

Speaker: **Professor Matthew Harding (University of California, Irvine)**

Professor Harding discussed how Artificial Intelligence (AI) can learn and replicate subjective judgements of high-skilled workers, a possible enabler for improving business efficiency, as well as his perspectives on how big data, and AI can create value in business.

Discussion theme: **Big Data and Context-based Marketing**

Speaker: **Professor Yasutora Watanabe (University of Tokyo)**

Professor Watanabe discussed how big data can be an enabler for understanding customer behavior, particularly when contextual factors play an important role, as well as his perspectives on how analytics, big data, and AI can create value in business.

Discussion theme: **Big Data and Analytics for Online Platform Market**

Speaker: **Professor Kosuke Uetake (Yale School of Management, Yale University)**

Professor Uetake discussed how big data and analytics can help us to manage multi-sided online platform markets. Together with a high-level summary of key aspects in managing platform, practical recommendations and discussion were provided. Through big data analysis, Kosuke also shared new empirical findings on online platform management.

Discussion theme: **Big Data, Machine Learning and AI for Preserving Integrity in Online Social Networks**

Speaker: **Professor Dr Alon Halevy (Director Facebook AI & Professor, University of Washington)**

Professor Halevy discussed how big data, AI and analytics can help us to Preserving Integrity in Online Social Networks. Through a survey came from the perspective of having to combat a broad spectrum of integrity violations at Facebook, Alon discussed a potential and current challenges of machine learning, AI and state-of-art tools.

Discussion theme: **The Impact of AI on Society in the Coming Years**

Speaker: **Dr Steve Shwartz**

Steve explained how AI works and why we do not need to worry about evil robots trying to exterminate us. He then discussed how AI will impact society in many ways in the coming years. He explained why self-driving cars are not safe and should not be allowed on our roads. He also discussed AI-enhanced weapons of war, threats to our privacy, how AI can increase discrimination, and the impact of AI on employment.

Discussion theme: **From COVID-19 Testing to Election Prediction: How Small Are Our Big Data?**

Speaker: **Professor Xiao-Li Meng (Harvard University)**

The term "Big Data" emphasizes data quantity, not quality. What will be the effective sample size when we take into account the deterioration of data quality because of, for example, the selection bias in COVID-19 testing or the non-response bias in 2016 US Election polling results? This talk provides an answer to such questions, based on the concept of data defect index (ddi) developed in Meng (2018) [Statistical paradises and paradoxes in big data \(I\): Law of large populations, bigdata paradox, and the 2016 US presidential election](#). Annals of Applied Statistics, 685-726. He also discussed briefly the application of ddi for 2020 US Election, as reported in Isakov and Kuriwaki (2020) [Towards Principled Unskewing: Viewing 2020 Election Polls Through a Corrective Lens from 2016](#). Harvard Data Science Review.
