Chicago Booth Operations Management/Management Science Workshop, 5/25/2021

Speaker: Georgia Perakis

Title: The M&SOM Journal and a Taste of the Role of Analytics in the Fight of the COVID-19 Pandemic

In this talk I will first discuss changes on the M&SOM journal. Then I will discuss the work of my team related to COVID-19 this past year. I will discuss the MIT-Cassandra model that is a suite of models that are part of an ensemble method for COVID-19 case and death prediction. I will discuss the individual methods and what motivated them and then the ensemble method and show how they perform with data in the US. I will discuss how these models are comparing relative to other models also used by the CDC. I will further connect these predictions with detecting true infection (also referred to as prevalence). Finally, I will discuss how these methods and results can be used to distribute vaccines in different counties (or areas) within a state (or country) to a heterogeneous population, through optimization, ensuring fair distribution among the different counties. We will show how the proposed optimization model performs in the different counties in the state of Massachusetts.

(The MIT-Cassandra team includes my students (current and former): Amine Bennouna, David Nze-Ndong, Boyan Peshlov, Divya Singhvi, Omar Skali-Lami, Yiannis Spantidakis, Leann Thayaparan, Shane Weisberg)

Bio:

Georgia Perakis is the William F. Pounds Professor of Management and a Professor of Operations Research, Statistics and Operations Management at the MIT Sloan School of Management. She has been on the faculty at MIT Sloan since July 1998.

Perakis teaches courses and performs research in analytics, optimization, machine learning with applications in pricing, revenue management, supply chain and healthcare among others. At MIT over the years, she has taught in a variety of programs such as undergraduate, MSc, PhD, MBA and EMBA programs across MIT. For her teaching, Perakis won the Graduate Student Council Teaching Award in 2002 as well as the Jamieson Prize in 2014 for excellence in teaching and the Teacher of the Year award (among all faculty at the MIT Sloan School) in 2017.

In her research, she investigates the theory and practice of analytics. She is particularly interested on how to solve complex and practical problems in pricing, revenue management, supply chains, healthcare and energy applications among many others. She has widely published in some of the flagship journals of the field such as Operations Research, Management Science, M&SOM, Mathematics of Operations Research, Mathematical Programming and POM among others.

She has received the CAREER Award from the National Science Foundation and the PECASE Award from the Office of the President on Science and Technology. In 2016, she was elected as an INFORMS Fellow, that recognizes individuals for lifetime achievement to the field. In addition, her work has received recognition with awards such as the TSL Best Paper Award, the Best Paper competition of the Informs Service Science Section several times as well as Best Application of Theory Award from NEDSI (Northeast Decision Sciences Institute) Conference. Her work on promotions with the Oracle RGBU was a finalist at the Practice Award of the RMP Section of INFORMS in 2015. In addition, her work on predicting demand
for new products with Johnson & Johnson won first place at the Applied Research Challenge Competition in 2018. Her paper with Oracle received honorable mention while her paper with Stubhub was a finalist in the M&SOM practice based best paper competition in July 2019. Her work was also a finalist at the JD.com competition at the 2019 POM conference as well as in the IAAA (Innovative Applications of Analytics Award). Her paper on subsidies received the 2019 best paper award published in Management Science in the last three years. Finally, her work with her PhD students has also been recognized with several awards including the MSOM Society best student paper award, the Service Science best student paper award, the RMP best dissertation award, the CBOM best student paper award and the POM Supply Chain best student paper award.

Perakis has passion supervising PhD, masters and undergraduate students and builds lifelong relationships with them. So far, she has graduated twenty-seven PhD and fifty-two Masters students. In 2012, she received the Samuel M. Seegal Award for inspiring student to achieve excellence.

Currently, and since July 2019, she has been serving as the faculty co-director of the Operations Research Center (interdepartmental PhD program at MIT reporting to the Schwartzman College of Computing and MIT Sloan). In addition, since July 2017, she has also been serving as the faculty director of the Executive MBA (EMBA) program at MIT Sloan. In the past, from 2009 to July 2015, Perakis served as the Sloan faculty co-director of the Leaders for Global Operations (LGO, former LFM) Program at MIT (joint program between the Sloan School and the School of Engineering). She has also served as the group head of the Operations Management group at MIT Sloan School from 2010-2017.

Perakis is currently the Editor in Chief of the M&SOM journal. She has also served as America’s editor in chief of the Journal of Pricing and Revenue Management. She has served as Department Editor for the journal Service Science in the area of Analytics and as an Associate Editor for the flagship journals of the field: Management Science, Operations Research, MSOM, the INFORMS Journal on Optimization, and as a senior editor for POM. She has served as the chair of the RMP Section of INFORMS and as the VP of Meetings of the MSOM Society of INFORMS.

Perakis holds a BS in mathematics from the University of Athens as well as an MS in applied mathematics and a PhD in applied mathematics from Brown University.