

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Data Science for Operations Management

by

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co-authored work with QI Annabelle Feng

Date: 15 February 2019 (Friday)
Time: 10:30am - 11:30am
Venue: M802, Li Ka Shing Tower
The Hong Kong Polytechnic University
(Conducted in English)

Abstract:

We will review the various Data Science approaches that can be applied to problems arising in Operations Management Decision Making. Importance of the differences in “learning algorithms,” to “making the most of data,” decision making will be highlighted. Also, in either cases, the differences in adversarial modeling (min max regret), approximate modeling (objective operational learning) and model free decision making (multi armed bandit) will be highlighted. In the case of making the most of data, superiority of Operational Data Analytic approaches over Robust Optimization will be demonstrated.

Bio:

J. George Shanthikumar is the Richard E. Dauch Chair Professor of Manufacturing and Operations Management and a University Distinguished Professor of Management at the Krannert School of Management, Purdue University, West Lafayette, IN and a Professor Emeritus of Industrial Engineering and Operations Research at the University of California, Berkeley, CA. Before joining Purdue, he was a Chancellor’s Professor of Industrial Engineering and Operations Research at the University of California, Berkeley, CA. He received the B. Sc. degree in Mechanical Engineering from the University of Sri Lanka, Peradeniya, and the M. A. Sc. and Ph. D. degrees in Industrial Engineering from the University of Toronto, Toronto, Canada.

He was the president of POMS for the year 2018, is a Fellow of the Institute for Operations Research and Management Science (INFORMS) and Production and Operations Management (POM) Societies. He is a member of the editorial advisory boards of *Asia-Pacific Journal of Operations Research*, *IEEE Transactions on Automation Sciences and Engineering*, and *Flexible Services & Manufacturing Journal*. He is a departmental editor of *Management Science*, and *Production and Operations Management Society Journal*, an associate editor of *Naval Research Logistics*. He was a member of the editorial advisory board of *Journal of the Production and Operations Management Society*, was a co-editor of *Flexible Services & Manufacturing Journal*, area editor for *Operations Research Letters* and was an associate editor for *IIE Transactions*, *International Journal of Flexible Manufacturing Systems*, *Journal of Discrete Event Dynamic Systems*, *Operations Research*, *OPSEARCH*, *Probability in the Engineering and Informational Sciences* and *Queueing Systems: Theory and Applications*.

His research interests are in model uncertainty, learning, data-integrated operations management, production systems modeling and analysis, queueing theory, reliability, scheduling, semiconductor yield management, simulation, stochastic processes, and supply chain management. He has written or written jointly over 300 papers on these topics. He is a coauthor (with John A. Buzacott) of the book *Stochastic Models of Manufacturing Systems* and a coauthor (with Moshe Shaked) of the book *Stochastic Orders and Their Applications* and the book *Stochastic Orders*.

Dr. Shanthikumar has extensively consulted for various companies like **Applied Materials (AMAT)**, **Bellcore**, **IBM**, **KLA-Tencor**, **NTT (Japan)**, **Intel**, **Intermolecular**, **Reel Solar**, **Safeway**, and **Southern Pacific Railways** and through KLA-Tencor worked on Joint Development Projects for **AMD**, **IBM**, **Intel**, **LSI**, **Motorola**, **TI**, **Toshiba**, **Fujitsu**, **TSMC** and **UMC**. He is an advisory consultant for **Sensor Analytics** and a member of the technical advisory board of **Inter Molecular Inc.** and **Reel Solar, Inc.**

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All are welcome!