Jing Dong

Contact Information

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Academic Appointments

Columbia Business School, New York, NY
Division of Decision, Risk and Operations

Assistant Professor — Jul 2017 - present

Northwestern University, Evanston, IL
Department of Industrial Engineering and Management Sciences

Assistant Professor — Sep 2014 - Jun 2017
Adjunct Assistant Professor — Jul 2017 - present

Education

Columbia University, New York, NY

Ph.D., Operations Research, 2014

M.Sc., Operations Research, 2010

Hong Kong University, Hong Kong

B.Sc. with First Class Honors, Actuarial Science, 2009

Research Interests

Applied probability, stochastic simulation, stochastic modeling with applications in service operations management

Publications

"Queueing models for patient-flow dynamics in inpatient wards", with O. Perry, *Operations Research, to appear*

"The impact of delay announcements on hospital network coordination and waiting times", with E. Yom-Tov and G. Yom-Tov, *Management Science, 2019, Vol. 65, No. 5*

"Exact sampling of the infinite horizon maximum of a random walk over a non-linear boundary", with J. Blanchet and Z. Liu, *Journal of Applied Probability, to appear*

"Perfect sampling of GI/GI/c queues", with J. Blanchet and Y. Pei, *Queueing Systems, 2018, Vol. 90, Issue 1-2*

"ϵ-Strong simulation for multidimensional stochastic differential equations via Rough Path analysis", with J. Blanchet and X. Chen, *Annals of Applied Probability, 2017, Vol. 27, No. 1*

"Queues with time-varying arrivals and inspections with applications to hospital discharge policies", with C. Chan and L. Green, *Operations Research, 2017, Vol. 65, No. 2*

"Service systems with slowdowns: potential failures and proposed solutions", with P. Feldman and G. Yom-Tov, *Operations Research, 2015, Vol. 63, No. 2*

"Perfect sampling for infinite server and loss systems", with J. Blanchet, *Advances in Applied Probability, 2015, Vol. 47, Issue 3*

Working papers

"Optimal scheduling of proactive care with patient deterioration", with Y. Hu and C. Chan

"Managing queues with different resource requirements", with N. Zychlinski and C. Chan

"ϵ-Strong simulation for fractional Brownian motion and related stochastic differential equations", with Y. Chen and H. Ni

"The power of two in queue scheduling", with Y. Chen

"Off-service placement in inpatient flow management", with P. Shi, F. Zheng and X. Jin

"Managing supply in the on-demand economy: flexible workers, full-time employees, or both", with R. Ibrahim

"A new approach to sequential stopping for stochastic simulation", with P. Glynn

"A new approach to sequential stopping for multivariate stochastic simulation", with P. Glynn and Y. Zhu

Peer reviewed conference proceedings

"The asymptotic validity of sequential stopping rules for confidence interval construction using standardized time series", with P. Glynn, *Proceedings of the 2019 Winter Simulation Conference*

"On the almost sure convergence rate for a series expansion of fractional brownian motion", with Y. Chen, *Proceedings of the 2019 Winter Simulation Conference*

"Accelerating nonconvex learning vis replica exchange Langevin diffusion", with Y. Chen, J. Chen, J. Peng and Z. Wang, *2019 International Conference on Learning Representations*

"Unbiased metamodeling via likelihood ratios", with M.B. Feng and B. Nelson, *Proceedings of the 2018 Winter Simulation Conference*

"Three asymptotic regimes for ranking and selection with general sample distributions", with Y. Zhu, *Proceedings of the 2016 Winter Simulation Conference*

"Sampling point processes on stable unbounded regions and exact simulation of queues", with J. Blanchet, *Proceedings of the 2012 Winter Simulation Conference*

Grants

National Science Foundation CMMI-1762544. Title: "Collaborative Research: GOALI: Improving Patient Flow in Hospitals". Duration: Aug 2018 - Jul 2021. Role: PI (Lead PI: Ohad Perry, Industry Co-PI: Stephanie Gravenor at Northwestern Memorial Hospital)

National Science Foundation DMS-1720433. Title: "Collaborative Research: Tolerance-Enforced Simulation of Stochastic Processes". Duration: Sep 2017 - Aug 2020. Role: PI (Lead PI: Jose Blanchet)

National Science Foundation CMMI-1634982. Title: "Green Simulation: A Methodology for Reusing the Output of Past Computer Simulation Experiments". Duration: Jan 2017 - Dec 2019. Role: co-PI (PI: Barry Nelson)

Invited talks in Academic Institutions

McCombs School of Business, University of Texas at Austin, Austin, TX, 2019

Sauder School of Business, University of British Columbia, Vancouver, Canada, 2019

Department of Industrial Engineering and Decision Analytics, Hong Kong University of Science and

Technology, Hong Kong, 2018

School of Management, University College London, London, UK, 2018

Mathematical Institute, University of Oxford, Oxford, UK, 2018

Mostly OM Workshop, Tsinghua University, Beijing, China, 2018

IBM Thomas J. Watson Research Center, Yorktown Height, NY, 2014, 2018

Berkeley-Columbia Meeting in Engineering and Statistics, Columbia University, New York, NY, 2018

Department of Industrial and System Engineering, University of Minnesota, Minneapolis, MN, 2017

School of Industrial and System Engineering, Georgia Tech, Atlanta, GA, 2017

Graduate School of Business, Columbia University, New York, NY 2017

Fuqua School of Business, Duke University, Durham, NC, 2016

Department of Industrial and Systems Engineering, North Carolina State University, Raleigh, NC 2016

Retrospective Monte Carlo Workshop, Center for Research in Statistical Methodology, Warwick University, Coventry, UK, 2016

Department of Mathematics, University of Virginia, Charlottesville, VA, 2016

Applied Mathematics Colloquium, Illinois Institute of Technology, Chicago, IL, 2015

Department of Industrial Engineering and Management Sciences, Northwestern University, Chicago, IL, 2014

Department of Industrial Engineering, University of Pittsburgh, Pittsburgh, PA, 2014

Department of Industrial and Operations Engineering, University of Michigan, Ann Arbor, MI, 2014

National University of Singapore, Singapore, 2014

Singapore University of Technology and Design, Singapore, 2014

Teaching Experience

Columbia University, New York, NY, USA
Instructor, Graduate School of Business — Sep 2017 - present

- B6100 Managerial Statistics (MBA Core)

Northwestern University, Evanston, IL, USA
Searle Fellow — 2015

Instructor, Industrial Engineering and Management Sciences — Sep 2014 - Jun 2017

- IEMS 435 Introduction to Stochastic Simulation (Ph.D. Core)
- IEMS 303 Statistics (Undergraduate)
- IEMS 315 Stochastic Models and Simulation (Undergraduate)

Ph.D. Student

Yi Zhu (Northwestern)
Yi Chen (Northwestern, Primary advisor: Z. Wang)
Yue Hu (Columbia, co-advised with C. Chan and O. Perry)
Yan Chen (Columbia, Primary advisor: W. Whitt)
Jinsheng Chen (Columbia)

Post-Doctoral Fellow

Noa Zychlinski (Columbia, co-advised with C. Chan)

PH.D. THESIS COMMITTEE

Zhipeng Liu (Columbia), 2018
Fei He (Columbia), 2018
Yanan Pei (Columbia), 2018
Yutian Nie (Northwestern), 2017
Likuan Qin (Northwestern), 2017
Aya Wallwater (Columbia), 2015

RELATED WORKING EXPERIENCE

Alan Turing Institute, London, UK
Researcher, Analysing noisy data streams 2018 - present

Northwestern Memorial Hospital, Chicago, IL
Research Consultant, Capacity Planning, Jun 2017 - Aug 2017

Northwestern University, Evanston, IL
Co-producer, Engineering Transdisciplinary Outreach Project in the Arts (ETOPiA), 2016 - 2017

Stanford University, Stanford, CA
Visiting researcher, Management Science and Engineering, Oct 2014 - Dec 2014

Technion, Haifa, Israel
Visiting researcher, Industrial Engineering and Management, May 2013 - Jun 2013

Institute for Computational and Experimental Research in Mathematics, Providence, RI, USA
Visiting researcher, Computational Challenges in Probability, Sep 2012 - Dec 2012

Bank of China, Beijing, China
Research intern, Strategic Development, Jul 2008 - Aug 2008

PROFESSIONAL ACTIVITIES

Reviewer for *Operations Research*, *Management Science*, *Mathematics of Operations Research*, *Queueing Systems*, *Stochastic Systems*, *INFORMS Journal on Computing*, *Journal of Applied Probability*, *Bernoulli*, *IEEE Transactions on Automatic Control*, *IEEE Transactions on Automation Science and Engineering*, *ACM Transactions on Modeling and Computer Simulation*, *Naval Research Logistics*

National Science Foundation (NSF) Peer Review Panel

Organizing Committee of 2017 INFORMS Applied Probability Society Conference

Council Member of INFORMS Applied Probability Society, 2018 - present

Committee Member of INFORMS Applied Probability Society Best Student Paper Competition, 2018 - present

OUTSIDE ACTIVITIES

Columbia Business School requires its faculty members to disclose any activities that might present a real or apparent conflict of interest. Here is the list of my outside activities.

Research Collaborations:

- **Northwestern Memorial Hospital**, Chicago, IL Jun 2017 - present
  Analysis of patient flow data and develop models and tools for capacity planning of different inpatient units.