Bingnan (Luke) Lu

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Academic Appointments

University of Alberta — *Edmonton, AB*
Postdoctoral Fellow, Engineering Management – Department of Mechanical Engineering — *May 2025 – Now*

National University of Singapore — *Singapore*
Visiting Assistant Professor, Department of Analytics and Operations, NUS Business School — *Jan 2022 – May 2023*
Research Fellow, Institute of Operations Research and Analytics (IORA) — *Dec 2021 – May 2023*

Education

University of Minnesota — Minneapolis, MN
Ph.D. in Industrial and Systems Engineering — *Sept 2015 – Dec 2021*

Singapore University of Technology and Design — Singapore
B.E. in Engineering Systems and Design, with Honors (Summa Cum Laude) — *May 2012 – Aug 2015*

Research Interests

Service Operations, Stochastic Modeling, Queueing Theory, Healthcare Operations, On-demand Service Platforms, Humanitarian Operations

Publications

Published

- Benjaafar, S., Jouini, O., Legros, B., and **Lu, B.** (2025). Pooled Testing in the Presence of Congestion. *Operations Research Letters*, **58**, 107208.
- Jouini, O., Benjaafar, S., **Lu, B.**, Li, S., and Legros, B. (2022). Appointment-driven Queueing Systems with Non-punctual Customers. *Queueing Systems*, **101**, 1-56.
- Lim, Y. F., **Lu, B.**, Wang, R., and Zhang, W. (2020). Flexibly Serving A Finite Number of Heterogeneous Jobs in A Tandem System. *Production and Operations Management*, **29**(6), 1431-1447.

Work in Progress

- **Lu, B.**, Huang, K. and Salari, N. Enhancing Operational Intelligence for Food Rescue Services through Volunteer Engagement. *Work in Progress.*
- **Lu, B.**, Dong, Y., Ying, Y., Tan, H. and Keppo, J. Analytic Framework for Detecting Emerging Product Defects through Active Learning. *Work in Progress.*
- Benjaafar, S., **Lu, B.**, Wang, Z. and Yang, X. Optimal Dynamic Matching in Two-Sided Marketplaces. *Work in Progress.*

Teaching Experience

NUS Business School — National University of Singapore
Instructor — *Jan 2022 – May 2023*

DOS 3713 Project Management: Spring 2022/2023
DAO 1704 Decision Analytics using Spreadsheet: Fall 2022

Industrial and Systems Engineering — University of Minnesota
Teaching Assistant — *Jan 2016 – May 2021*

IE 5545 Decision Analysis: Spring 2021 (w/ Darin England)
IE 5541 Project Management: Spring 2019, 2020, Summer 2020, Fall 2017/2018/2019/2020 (w/ Mimi Wong)

IE 4551 Production and Inventory Control: Spring 2017/2018 (w/ Sherwin Doroudi)
IE 3521 Statistics, Quality and Reliability: Summer 2017 (w/ William Cooper)
IE 5113 Systems Engineering II: Spring 2016 (w/ Anton Beck)
IE 5513 Engineering Safety: Fall 2016 (w/ Jonathan Chaplin)

PROFESSIONAL ACTIVITIES

Reviewer, IMA Journal of Management Mathematics	*Feb – Sept 2024*
Volunteer, 2024 INFORMS Manufacturing and Service Operations Management Conference	*Jun 2024*
Advisor, FSP 4003 Field Service Project (undergraduate final-year project), NUS Business School	*Jan – May 2023*
Academic Supervisor, NUS MSBA Students' Professional Consulting Capstone Project	*May – Aug 2022*
Admissions Interviewer, M.S. in Business Analytics program, NUS Business Analytics Center	*Feb – Apr 2022*
Event Coordinator, INFORMS Student Chapter at UMN	*Jan 2016 – Jan 2020*

CONFERENCE PRESENTATIONS

"Analytic Framework for Detecting Emerging Product Defects through Active Learning"
- POMS Annual Conference, Minneapolis *2024*

"Pooled Testing in the Presence of Congestion"
- INFORMS Annual Meeting, Phoenix *2023*
- POMS Annual Conference, Orlando *2023*
- INFORMS Annual Meeting, Indianapolis *2022*
- Analytics for X Conference – IORA & NUS, Singapore *2022*

"Appointment-driven Queueing Systems with Non-punctual Customers"
- INFORMS Healthcare Conference, Virtual *2021*
- INFORMS Annual Meeting, Virtual *2021*

"Flexibly Serving A Finite Number of Heterogeneous Jobs in A Tandem System"
- CORS Annual Conference, Virtual *2021*
- MSOM Annual Conference, Singapore *2019*
- POMS International Conference, Tianjin *2019*

"Dynamic Server Assignment for Finite Arrival Service Systems"
- INFORMS International Conference, Hawaii *2016*

SUPERVISION

Yuanzhe Ying, Master's Student & Research Associate at NUS *Sept 2022 – May 2023*
- Advised on the design and implementation of active machine learning models for the project "Early Detection of Field Quality Signals" with ResMed Inc and the preparation of presentations for academic conferences

Yufan Dong, Graduate Research Assistant at NUS *May 2022 – May 2023*
- Advised on experimental design and data analysis for the project "Early Detection of Field Quality Signals" with ResMed Inc

Xinyu Hou, Master's and PhD Student at NUS *Jan 2022 – Mar 2023*
- Advised on development of demand forecasting methods using machine learning tools for the project "Early Detection of Field Quality Signals" with ResMed Inc

Brenda Tang & **Don Foh,** Undergraduate Research Assistants at NUS *Apr 2022 – Apr 2023*
- Supervised final-year graduation projects and advised on applied analytics, project management, and the preparation of research reports and presentations for industrial research collaborations

Siqi Chen & **Yifan Liu,** Master's Students at NUS *Jun 2022 – Aug 2022*
- Supervised Master's capstone projects focused on data-driven investment portfolio optimization and machine learning–based image recognition during students' summer internships

Honors and Awards

John Boylan Best Reviewer Award, IMA Journal of Management Mathematics	*2025*
CORS Diploma, Canadian Operational Research Society	*2023*
Second Place in the Initiative on the Sharing Economy Student Competition ($500), UMN	*2019*
Department of Industrial and Systems Engineering Merit Fellowship ($3,000), UMN	*2015 – 2016*
GLC-SM2 PRC Student Scholarship ($235,000), Singapore Ministry of Education	*2011 – 2015*

Skills

Programming & Software: Matlab, Mathematica, R, Python, MS Project, MS Excel (with VBA), LaTeX

Project Management: Leadership and team management, Project life cycle monitoring and control (scope, time, budget, risk, etc.), Stakeholder engagement, Incentive alignment, Agile project management.

Language: English (fluent), Mandarin (native)

Relevant Courses

PhD: Stochastic Processes and Queueing Systems, Linear and Nonlinear Optimization, Production Planning and Inventory Control, Stochastic Inventory Theory and Supply Chain Management, Mathematical Analysis, Theory of Probability, Microeconomics Analysis, Microeconomics Theory

Undergraduate: Operations Management, Stochastic Modeling, Optimization, Simulation Modeling and Analysis, Business Analytics, Supply Chain Management, Quality and Reliability, Network Modeling, Project Management, Statistics, Game Theory