

Ian Yihang Zhu

ianyzhu@nus.edu.sg | ianyzhu.com

Department of Analytics and Operations ◊ NUS Business School

Employment

NUS Business School

Assistant Professor, Department of Analytics and Operations
Affiliated Faculty, Institute of Operations Research and Analytics

July 2023 - Present
July 2023 - Present

Education

University of Toronto

Ph.D., Operations Research 2018 - 2023
M.A.Sc., Operations Research 2016 - 2018

University of British Columbia

B.Sc., Mathematics (with Distinction) 2012 - 2016

Research Interests

Methods: prescriptive analytics, data-driven optimization, inverse optimization, mathematical programming
Applications: transportation and logistics, supply chain analytics, operations management, incentive design

Published Papers¹

1. Inverse Optimization: Theory and Applications

T.C.Y. Chan, R. Mahmood, I.Y. Zhu

Operations Research (2025) Vol. 73, No. 2: 1046-1074.

- One of the most downloaded OR papers in 2024 and 2025 (8000+ each year)

2. Got (Optimal) Milk? Pooling Donations in Human Milk Banks with Machine Learning and Optimization

T.C.Y. Chan, R. Mahmood, D. O'Connor, D. Stone, S. Unger, R.K. Wong, I.Y. Zhu

Manufacturing & Service Operations Management Vol 27, No. 6: 1721-1239.

- Second Place, Innovative Applications in Analytics Award 2024
- First Place, Pierskalla Best Paper Award 2023
- Runner Up, POMS CHOM Best Paper Competition 2023
- Honorable Mention, CORS Practice Prize 2023
- Finalist, MSOM Practice-Based Research Competition 2023
- Accepted to MSOM Healthcare SIG 2023

3. Advising Student-Driven Analytics Projects: A Summary of Experiences and Lessons Learned

A. Babier, C. Fernandes, I.Y. Zhu

INFORMS Transactions on Education (2023) Vol. 23, No. 2: 121-135.

- Featured in OR/MS Today

4. Spatial Price Integration in Commodity Markets with Capacitated Transportation Networks

J.R. Birge, T.C.Y. Chan, J.M. Pavlin, I.Y. Zhu

Operations Research (2022) Vol. 70, No. 3: 1739-1761.

- Finalist, MSOM Student Paper Competition 2022

¹All operations research-style journals have alphabetical author ordering.

- Finalist, CORS Student Paper Competition 2022
- Featured in Chicago Booth Review

5. *Inverse Mixed Integer Optimization: Polyhedral Insights and Trust Region Methods*
 M. Bodur, T.C.Y. Chan, I.Y. Zhu

INFORMS Journal on Computing (2022) Vol. 34, No. 3: 1471-1488.

- First Place, CORS Student Paper Competition 2022

6. *Predicting Protein and Fat Content in Human Donor Milk Using Machine Learning*

R.K. Wong, M.A. Pitino, R. Mahmood, I.Y. Zhu, D. Stone, S. Unger, D. O'Connor, T.C.Y. Chan
Journal of Nutrition (2021) Vol. 151, No. 7: 2075–2083.

Working Papers

1. *Network Flow Models for Robust Binary Optimization with Selective Adaptability*

M. Bodur, T.C.Y. Chan, I.Y. Zhu

Minor revision at INFORMS Journal on Computing (2025).

2. *Inverse Optimization with Discrete Decisions*

J. Chua, I.Y. Zhu

Submitted (2025).

3. *Algorithmic Recourse in Discrete Resource Allocation*

J. Chua, I. Rios, I.Y. Zhu

Working paper (2026).

4. *Robust Network Pricing*

M. Carvalho, I.Y. Zhu

Working paper (2026).

Non-Peer-Reviewed Publications

1. *Student-Driven Projects: Learning Analytics in a Data-Driven Age*

I.Y. Zhu, C. Fernandes, A. Babier

OR/MS Today (2023) Vol. 50, No. 1.

Teaching Experience

DBA3701 Introduction to Optimization, NUS

Bachelor of Business Administration, Elective (1 section)

Spring 2026

DBA5103 Operations Research and Analytics, NUS

Masters of Business Analytics, Core Module (3 sections)

Fall 2024 (4.8/5.0; N = 143)

- Honorable Mention, INFORMS JFIG Teaching Excellence Award 2025

DAO1704 Decision Analytics with Spreadsheets, NUS

Bachelor of Business Administration, Core Module (3 sections)

Spring 2024 (4.5/5.0; N = 194)

Selected Talks and Seminars

Singapore Analytics & Operations Day

2025

Robust Optimization Webinar

2025

Singapore Management University, OM Group	2024
CMU Tepper, Operations Research Group	2023
University of Montreal, CS & OR Group	2023
NUS Business School, Department of Analytics and Operations	2022
UNC Kenan-Flagler Business School, Operations Group	2022
Northwestern University, Department of IEMS	2022
CMU Tepper, YinzOR Conference	2022
University of Waterloo, Management Sciences	2022
GERAD and CIRRELT Research Centers	2022

Selected Awards

Academic and Research

Second Place, Innovative Applications in Analytics Award	2024
First Place, Pierskalla Best Paper Award	2023
Finalist, MSOM Practice-Based Research Competition	2023
Runner Up, POMS College of Healthcare OM Paper Competition	2023
Honorable Mention, CORS Practice Prize	2023
Finalist, MSOM Student Paper Competition	2022
First Place, CORS Student Paper Competition	2022
Queen Elizabeth II Graduate Scholarship in Science and Technology	2022
Ontario Graduate Scholarship	2021
NSERC Canada Graduate Scholarship (Doctoral)	2018 - 2021
NSERC Canada Graduate Scholarship (Master's)	2017
University of Toronto Graduate Entrance Award	2016
NSERC Undergraduate Summer Research Award	2014, 2015
UBC Charles and Jane Banks Scholarship	2014
UBC Trek Excellence Scholarship	2014
UBC Science Scholar	2014
UBC Chancellor's Scholar	2012

Teaching

Honorable Mention, INFORMS JFIG Teaching Excellence Award	2025
Teaching Assistant Award (MIE, University of Toronto)	2022
Group Teaching Assistant Award (MIE, University of Toronto)	2021

Mentorship

PhD Student Advising

Jerry Chua (main advisor; co-advised with Melvyn Sim), 2023 – present
Honglin An (co-advised with Melvyn Sim), 2023 – present
Xinyu Hou (co-advised with Jussi Keppo), 2023 – present
Bei Lin (visiting student from Renmin University), 2024 – present

Examiner Roles

PhD Thesis Examiner: Yuchen Liang (2025), Ruijiu Mao (2025), Pengfeng Shu (2025), Ke Nan (2025)
Second Year Paper Examiner: Wu Hao (2023)

Service

National University of Singapore

Instructor of DAO PhD Proseminars	2026
-----------------------------------	------

Co-Chair of Department Seminars	2024 - 2025
Faculty Hiring Committee	2023 - 2024

INFORMS

Cluster Chair (Computing Society) for the INFORMS International Conference	2025
Cluster Chair (Inverse Optimization) for the INFORMS Computing Society Conference	2025
Co-Chair of Pierskalla Best Paper Award	2024
Judge for Public Sector Operations Research (PSOR) Best Paper Award	2024

Journal and Conference Referee

Operations Research ($\times 3$), INFORMS Journal on Computing ($\times 3$), Discrete Optimization ($\times 2$), Management Science, Mathematical Programming, Production and Operations Management, Manufacturing and Service Operations Management, MSOM SIG, Service Science, Transportation Science, INFORMS Journal on Optimization, INFORMS Transactions on Education, Optimization Letters