Ian Yihang Zhu

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Department of Analytics and Operations ⋄ NUS Business School

Employment

NUS Business School
Assistant Professor, Department of Analytics and Operations   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

Data-driven optimization, inverse optimization, incentive design, decision analytics, structural estimation
Transportation and logistics, supply chain analytics, operations management

Published Papers[1]

1. *Inverse Optimization: Theory and Applications*
T.C.Y. Chan, R. Mahmood, I.Y. Zhu
Operations Research (Articles in Advance).

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 (Articles in Advance).
  - 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
  - Finalist, CORS Student Paper Competition 2022
  - Featured in Chicago Booth Review

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

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.

Papers Under Review

1. *Network Flow Models for Robust Binary Optimization with Selective Adaptability*
M. Bodur, T.C.Y. Chan, I.Y. Zhu
Under review at INFORMS Journal on Computing (2024).

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

DBA5103 Operations Research and Analytics, NUS 2024
Masters of Business Analytics (core module)

DAO1704 Decision Analytics with Spreadsheets, NUS 2024
Bachelor of Business Administration (core module)

MIE368 Analytics in Action (Teaching Assistant), University of Toronto 2020, 2021
Recieved Department's 2021-22 TA Award and 2020-21 Group TA Award

MIE263 Operations Research II (Teaching Assistant), University of Toronto 2019, 2020

Selected Talks and Seminars

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

Teaching Assistant Award (MIE, University of Toronto)	2022
Group Teaching Assistant Award (MIE, University of Toronto)	2021

Mentorship

PhD Student Advising

Honglin An (co-advised with Melvyn Sim), 2023 – present
Jerry Chua (co-advised with Melvyn Sim), 2023 – present
Xinyu Hou (co-advised with Jussi Keppo), 2023 – present

PhD Student Collaborators

Wu Hao, 2023 – present

Examiner Roles

PhD Thesis Proposal Examiner: Ruijiu Mao (2024)
Second Year Paper Examiner: Wu Hao (2023)

Service

National University of Singapore

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

INFORMS

Cluster Chair 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

Ad-hoc Journal and Conference Referee

Operations Research, Management Science, MSOM SIG, INFORMS Journal on Computing, Transportation Science, INFORMS Journal on Optimization, INFORMS Transactions on Education