ILBIN LEE

3-21C Business Building, University of Alberta, Edmonton, AB, Canada T6G 2R6
780-492-7763 ⋄ ilbin@ualberta.ca

PROFESSIONAL EXPERIENCE

Alberta School of Business, University of Alberta — Edmonton, Alberta, Canada
Associate Professor in Business Analytics — 2024–present
Assistant Professor in Business Analytics — 2017–2024

Korea Advanced Institute of Science and Technology — Daejeon, South Korea
Visiting Professor in Industrial & Systems Engineering — 2024–2025

Georgia Institute of Technology — Atlanta, Georgia, USA
Postdoctoral Fellow in Industrial and Systems Engineering — 2015–2017

IBM T. J. Watson Research Center — Yorktown Heights, New York, USA
Summer Research Intern — Summer 2013 and 2014

Electronics and Telecommunications Research Institute — Daejeon, South Korea
Researcher in Speech Recognition and Machine Learning at Software Research Lab — 2007–2010

EDUCATION

University of Michigan — 2010–2015
Ph.D. in Industrial and Operations Engineering
(Advisors: Marina A. Epelman and H. Edwin Romeijn)

SUNY at Stony Brook — 2005–2006
M.S. in Applied Mathematics and Statistics

Korea Advanced Institute of Science and Technology — 2000–2005
B.S. in Mathematics

PUBLICATIONS

Note: Underline denotes student

Journal Papers:

[P9] **Lee, I.** (2024). Is Separately Modeling Subpopulations Beneficial for Sequential Decision-Making? *Operations Research*, 72(6), 2595–2611

[P8] Davis, S., Zhang, J., **Lee, I.**, Rezaei, M., Greiner, R., McAlister, F., & Padwal, R. (2022). Effective Hospital Readmission Prediction Models using Machine-Learned Features. *BMC Health Services Research*, 22, 1415.

[P7] Zheng, Y., Xie, Y., **Lee, I.**, Dehghanian, A., & Serban, N. (2022). Parallel Subgradient Algorithm with Block Dual Decomposition for Large-scale Optimization. *European Journal of Operational Research*, 299(1), 60–74.

[P6] Curry, S., **Lee, I.**, Ma, S., & Serban, N. (2022). Global Sensitivity Analysis via a Statistical Tolerance Approach. *European Journal of Operational Research*, 296(1), 44–59.

[P5] **Lee, I.**, Curry, S., & Serban, N. (2019). Solving Large Batches of Linear Programs. *INFORMS Journal on Computing*, 31(2), 302–317.

[P4] **Lee, I.**, Monahan, S., Serban, N., Griffin, P., & Tomar, S. (2018). Estimating the Cost Savings of Preventive Dental Services Delivered to Medicaid-Enrolled Children in Six Southeastern States. *Health Services Research*, 53(5), 3592–3616.

[P3] Zheng, Y., **Lee, I.**, & Serban, N. (2018). Regularized Optimization with Spatial Coupling for Robust Decision Making. *European Journal of Operational Research*, 270(3), 898–906.

[P2] **Lee, I.**, Epelman, M. A., Romeijn, H. E., & Smith, R. L. (2017). Simplex Algorithm for Countable-State Discounted Markov Decision Processes. *Operations Research*, 65(4), 1029–1042.

[P1] **Lee, I.**, Epelman, M. A., Romeijn, H. E., & Smith, R. L. (2014). Extreme Point Characterization of Constrained Nonstationary Infinite-horizon Markov Decision Processes with Finite State Space. *Operations Research Letters*, 42, 238–245.

Conference Papers:

[C2] Xiao, C., **Lee, I.**, Dai, B., Schuurmans, D., & Szepesvári, C. (2022). The Curse of Passive Data Collection in Batch Reinforcement Learning. *The 25th International Conference on Artificial Intelligence and Statistics (AISTATS)*, *Proceedings of Machine Learning Research*, 151, 8413–8438.

[C1] **Lee, I.**, Sohrabi, S., Riabov, A., & Udrea, O. (2018). Investigation Planning in Data Analysis. *Goal Reasoning Workshop at IJCAI/FAIM.*

Working Papers:

[W1] Sentenac, F., Lee, I., & Szepesvári, C., Balancing Optimism and Pessimism in Offline-to-online Learning (under revision, *Operations Research*)

[W2] Behrooz, M., Lee, I., & Cribben, I., Optimal Retirement Timing: A Data-Driven Decision-making Model for Retirement Planning (to be submitted soon, manuscript available upon request)

[W3] Zeinali, Y., Lee, I., Rezaei, M., & Ingolfsson A., Data-driven Optimization for Wildfire Suppression Resource Deployment: A Case Study of Alberta Wildfires (to be submitted soon, manuscript available upon request)

[W4] Rezaei, M., Beverly, J., & Lee, I., The Effect of Wildfire Suppression Resources: Targeting Fire Groups with Enhanced Treatment Effect (in preparation)

TEACHING EXPERIENCE

University of Alberta

OM 420/620 Predictive Business Analytics (Undergraduate & MBA) 2018–present

OM 502 Operations Management (MBA) 2018–present

Korea Advanced Institute of Science and Technology

IE801 Markov Decision Processes and Principles of Reinforcement Learning (Graduate) Fall 2024

University of Michigan

IOE 202 Operations Modeling (Undergraduate) Fall 2013

ADVISING

Mostafa Rezaei (Postdoc, first placement: Assistant Professor, ESCP Business School) 2019–2021

Mehrnaz Behrooz (PhD student, with Ivor Cribben) 2020–present

Yasser Zeinali (PhD student, with Ivor Cribben) 2020–present

Sacha Davis (MSc student in Computing Science, with Russell Greiner) 2020–2023

Wang Dong (MSc student in Computing Science, with Csaba Szepesvári) 2019–2021

FUNDING

National Research Foundation of Korea, Brain Pool, 2024–2025, $257,330, "Integrating machine learning prediction and optimization for routing wildfire detection drones"

Alberta Health Services, Hospital Medicine Strategic Clinical Network Priority Funding (PI), 2023–2024, $20,000, "Advanced Machine Learning for Improving Patient Flow"

Alberta Ministry of Agriculture and Irrigation, Canada Wildfire Project (PI), 2022–2023, $31,200, "Data Analytics for Categorizing Historical Wildfires to Help Suppression Operations"

Alberta School of Business, CN Western Economic Research Fellowship (PI), 2021–2024, $30,000, "Data Analytics for Decision Making: Wildfire Suppression in Alberta"

Alberta School of Business, EFF-SAS Research Award (PI), 2020, $6,000

Natural Sciences and Engineering Research Council, Canada Wildfire Strategic Network (co-PI), 2020–2026, $5,000,000 ($100,000 budgeted to I. Lee)

Alberta Ministry of Agriculture and Irrigation, Canada Wildfire Project (PI), 2019–2021, $54,783, "Modeling Initial Attack Containment Success: a Tool to Support Initial Attack Dispatching Decisions"

Natural Sciences and Engineering Research Council, Discovery Grant (PI), 2018–2026, $186,060, "Computational Sensitivity Analysis for Decision Making under Data Uncertainty"

Alberta School of Business, Xerox Faculty Fellowship (PI), 2018–2019, $15,000, "Analysis and Methods for Sequential Decision Making under Data Uncertainty"

PRESENTATIONS

(All presentations given by myself)

Retirement Decision-Making: When is the Right Time?
- INFORMS Annual Meeting, October 2024

Data-Driven Predictive and Prescriptive Approach for Wildfire Suppression Resource Deployment: A Case Study of Alberta Wildfires
- INFORMS Transportation Science and Logistics Society Workshop, May 2025
- INFORMS Annual Meeting, October 2024
- Optimization and Wildfire Conference, October 2024
- INFORMS Annual Meeting, October 2023

The Curse of Passive Data Collection in Batch Reinforcement Learning
- CORS/INFORMS International Conference, June 2022

Estimating the Treatment Effect of Initial Attack Resources in Wildfire Suppression
- Wildland Fire Canada Conference, November 2022
- POMS Conference, April 2022

Effective Hospital Readmission Prediction Models using Machine-Learned Features
- CORS Conference, May 2023
- INFORMS Healthcare Conference, July 2021
- INFORMS Annual Meeting, November 2020

Is Separately Modeling Subpopulations Beneficial for Sequential Decision-Making?
- INFORMS Annual Meeting, October 2022
- MSOM Conference, June 2022
- ESCP Business School, May 2022
- Industrial and Systems Engineering, KAIST, December 2019

– Industrial Management Engineering, Korea University, December 2019
– Management Science, University of Waterloo, November 2019
– INFORMS Healthcare Conference, July 2019
– INFORMS Computing Society Conference, January 2019
– Sauder School of Business, University of British Columbia, October 2018

Uncertainty Quantification for Optimization Models: How does the Data Uncertainty Propagate into Decisions?
– Industrial and Systems Engineering, KAIST, December 2017
– INFORMS Computing Society Conference, January 2017
– INFORMS Annual Meeting, November 2016
– ISyE DOS Seminar, Georgia Tech, October 2016

Estimating the Cost Savings of Preventive Dental Services Delivered to Medicaid-Enrolled Children in Six Southeastern States
– Alberta Health Services, November 2017
– INFORMS Annual Meeting, October 2017
– Georgia Tech Postdoctoral Research Symposium, September 2016

Analysis of Algorithms for Non-stationary Markov Decision Processes
– INFORMS Annual Meeting, November 2015

A Linear Programming Approach to Constrained Nonstationary Markov Decision Processes
– INFORMS Annual Meeting, November 2014

Investigation Planning in Data Analysis
– IBM T. J. Watson Research Center, August 2014

Simplex Algorithm for Countable-state Discounted Markov Decision Processes
– Engineering Graduate Symposium, University of Michigan, November 2014
– SIAM Conference on Optimization, May 2014

Convergence Rate Analysis of the Simplex Algorithm for Nonstationary Markov Decision Processes
– INFORMS Annual Meeting, October 2013

A Markov Decision Process Approach to Strategic Planning
– IBM T. J. Watson Research Center, August 2013

Improvements of the Simplex Algorithm for Nonstationary Markov Decision Processes and its Applications
– INFORMS Annual Meeting, October 2012

An Overview of Korean-English Speech-to-Speech Translation System
– Workshop on Technologies and Corpora for Asia-Pacific Speech Translation, August 2009

PROFESSIONAL SERVICE AND AFFILIATIONS

Conference organization:
Co-Chair of the Poster Session and Competition, INFORMS Annual Meeting 2025
Co-Chair, Canadian Healthcare Optimization Workshop (CHOW) 2025
Program and local committee, MSOM Conference 2020

Reviewer: *Management Science, Operations Research, Manufacturing & Service Operations Management, Production and Operations Management, INFORMS Journal on Computing, IISE Transactions, Journal of Machine Learning Research, International Journal of Wildland Fire, Service Science, Annals of Applied Statistics, INFORMS Transactions on Education, Optimization Letters*

Judge:
2019 Pierskalla Award, INFORMS Health Applications Society
Career, Research, Innovation, and Development Conference 2016, Georgia Tech

Invited session organizer and chair:
INFORMS Healthcare Conference 2019
INFORMS Annual Meeting 2019, 2017, 2016, 2013
SIAM Conference on Optimization 2014

Member: *Institute for Operations Research and the Management Sciences (INFORMS), Production and Operations Management Society (POMS), Canadian Operational Research Society (CORS)*

AWARDS AND HONORS

- The Best Oral Presentation, Georgia Tech Postdoctoral Research Symposium, 2016
- IOE Murty Prize, University of Michigan, 2013

Updated: October 2025