

ILBIN LEE

2-29B Business Building, University of Alberta, Edmonton, AB, Canada T6G 2R6
780-492-7763 ◊ ilbin@ualberta.ca

PROFESSIONAL EXPERIENCE

- University of Alberta** Edmonton, Alberta, Canada
Assistant Professor in School of Business 2017–present
Operations Management
- Georgia Institute of Technology** Atlanta, Georgia, USA
Postdoctoral Fellow in School of Industrial & Systems Engineering 2015–2017
– Worked on data analytics for healthcare applications and managing uncertainty in large-scale optimization problems
- IBM T. J. Watson Research Center** Yorktown Heights, New York, USA
Summer Research Intern Summer 2013 and 2014
– Developed algorithms for decision-making problems in large-scale data analysis
- Electronics and Telecommunications Research Institute** Daejeon, South Korea
Researcher in Software Research Lab 2007–2010
– Developed machine learning algorithms and software for speech recognition

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

RESEARCH PAPERS

- Lee I., Curry S., and Serban N., Solving Large Batches of Linear Programs, *INFORMS Journal on Computing*, in press
- Lee I., Monahan S., Serban N., Griffin P., and Tomar S., Estimating the Cost-savings of Preventive Dental Services Delivered to Medicaid-enrolled Children in Six Southeastern States, *Health Services Research*, in press
- Lee I., Riabov A., Sohrabi S., and Udrea O., Investigation Planning for Data Analysis, *Proceedings of the 6th Goal Reasoning Workshop at IJCAI/FAIM-2018*, in press
- Zheng R., Lee I., and Serban N., Regularized Optimization with Spatial Coupling for Robust Decision Making, *European Journal of Operational Research*, 270(3), 898-906, 2018
- Lee I., Epelman M.A., Romeijn H.E, and Smith R.L., Simplex Algorithm for Countable-state Discounted Markov Decision Processes, *Operations Research*, 65(4), 1029-1042, 2017
- Lee I., Epelman M.A., Romeijn H.E, and Smith R.L., Extreme Point Characterization of Constrained Nonstationary Infinite-horizon Markov Decision Processes with Finite State Space, *Operations Research Letters* 42 (2014) 238-245

In preparation:

Zheng R., Lee I., and Serban N., Variable Partitioning for Distributed Optimization (submitted)

Curry S., Lee I., and Serban N., Global Sensitivity Analysis for High-Dimensional Linear Programs

Lee I., Is Modeling Heterogenous Transition Patterns Beneficial for Sequential Decision-Making?

TEACHING EXPERIENCE

University of Alberta

OM 502 Operations Management

Winter 2018

OM 420/620 Introduction to Business Analytics

Winter 2018

University of Michigan

IOE 202 Operations Modeling

Fall 2013

STUDENT ADVISING

Ph.D. students: Stewart Curry, Richard Zheng (Georgia Tech)

Undergraduate student: Sean Monahan (Georgia Tech)

FUNDING

NSERC, Discovery Grant (PI), 2018-2023, CAD 125,000, “Computational Sensitivity Analysis for Decision-Making under Data Uncertainty”

Alberta School of Business, Xerox Faculty Fellowship 2017/2018 (PI), CAD 15,000, “Analysis and Methods for Sequential Decision-Making under Data Uncertainty”

Georgia Tech, Petit Undergraduate Research Scholars Program 2016, USD 9,000, “Understanding and Managing Longitudinal Dental Care Utilization for Children in the Medicaid System” (funded each for mentor (I. Lee) and mentee (S. Monahan))

PRESENTATIONS

Lee I., Is Modeling Heterogeneous Transition Patterns Beneficial for Sequential Decision-Making?, Sauder School of Business, University of British Columbia, October 12, 2018

Lee I., Epelman M.A., Romeijn H.E., Smith R.L., Simplex Algorithm for Countable-state Discounted Markov Decision Processes, At the AI Seminar of the Department of Computing Science in the University of Alberta, Edmonton, AB, Canada, January 12, 2018

Lee I., Curry S., and Serban N., Uncertainty Quantification for Optimization Models How does the data uncertainty propagate into decisions?, KAIST ISysE, Daejeon, South Korea, December 14, 2017

Lee I., Monahan S., Serban N., Griffin P., and Tomar S., Estimating the Cost Savings of Preventive Dental Services by Data Analytics, At the Alberta Health Services, Edmonton, AB, Canada, November 8, 2017

Lee I., Monahan S., Serban N., Griffin P., and Tomar S., Estimating the cost-savings of preventive dental services by unsupervised learning, In an invited session in INFORMS Annual Meeting 2017, Houston, TX, USA, October 25, 2017

Lee I., Curry S., and Serban N., Quantifying Uncertainty of Healthcare Access Measures Derived by Optimization, In an invited session in INFORMS Computing Society Conference 2017, Austin, TX, USA, January 15-17, 2017

Lee I., Curry S., and Serban N., Solving Large Batches of Linear Program, In an invited session in INFORMS Annual Meeting 2016, Nashville, TN, USA, November 16, 2016

- Lee I., Curry S., and Serban N., Uncertainty Quantification for Optimization Models and Batch Solution Methods, ISyE DOS Seminar, Georgia Tech, Atlanta, GA, USA, October 18, 2016
- Lee I., Monahan S., Serban N., Griffin P., and Tomar S., Estimating the cost-savings of preventive dental services delivered to Medicaid-enrolled children in six southeastern states, *Georgia Tech Postdoctoral Research Symposium*, Atlanta, GA, USA, September 22, 2016 (**Won the Best Oral Presentation Award**)
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., Analysis of Algorithms for Non-stationary Markov Decision Processes, In an invited session in *INFORMS Annual Meeting 2015*, Philadelphia, PA, USA, November 2, 2015
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., Simplex Algorithm for Countable-state Discounted Markov Decision Processes, poster presentation in *Engineering Graduate Symposium 2014*, University of Michigan, Ann Arbor, MI, USA, November 14, 2014
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., A Linear Programming Approach to Constrained Nonstationary Markov Decision Processes, In an invited session in *INFORMS Annual Meeting 2014*, San Francisco, CA, USA, November 10, 2014
- Lee I., Udrea O., Sohrabi S., Riabov A.V., Investigation Planning in Data Analysis, IBM Watson Research Center, Yorktown Heights, NY, USA, August 22, 2014
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., A Linear Programming Approach to Markov Decision Processes with Countably Infinite State Space, In a mini-symposium in *SIAM Conference on Optimization 2014*, San Diego, CA, USA, May 22, 2014
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., Convergence Rate Analysis of the Simplex Algorithm for Nonstationary Markov Decision Processes, In an invited session in *INFORMS Annual Meeting 2013*, Minneapolis, MN, USA, October 7, 2013
- Lee I., Udrea O., Sohrabi S., Riabov A.V., A Markov Decision Process Approach to Strategic Planning, IBM Watson Research Center, Yorktown Heights, NY, USA, August 15, 2013.
- Lee I., Epelman M.A., Romeijn H.E., Smith R.L., Improvements of the Simplex Algorithm for Nonstationary Markov Decision Processes and its Applications, In an invited session in *INFORMS Annual Meeting 2012*, Phoenix, USA, October 15, 2012
- Lee I., Park J., Kim C., Kim Y., Kim S., An Overview of Korean-English Speech-to-speech Translation System, In: *Workshop on Technologies and Corpora for Asia-Pacific Speech Translation*, Singapore, August 2, 2009

PROFESSIONAL SERVICE AND AFFILIATIONS

Reviewer: *IIE Transactions, Optimization Letters, Annals of Applied Statistics, International Journal of Wildland Fire*

Judge: *Career, Research, Innovation and Development Conference 2016 (CRIDC)*, Georgia Tech

Invited session organizer and chair:

“Novel Approaches in Distributed/Large-scale Optimization”, *INFORMS Annual Meeting 2017*

“Health Data Analytics for Policy Making”, *INFORMS Annual Meeting 2017*

“Computational Approaches to Large-scale/Exact Optimization”, *INFORMS Annual Meeting 2016*

“Linear Programming Approaches to Dynamic Programming”, *INFORMS Annual Meeting 2013*

Mini-symposium organizer and chair, “Analysis and Algorithms for Markov Decision Processes”, *SIAM Conference on Optimization*

Member: *Institute for Operations Research and the Management Sciences (INFORMS)*

AWARDS AND HONORS

- The Best Oral Presentation, Georgia Tech Postdoctoral Research Symposium, 2016
- SIAM Student Travel Grant, 2014
- INFORMS Future Academician Colloquium, 2013
- IOE Murty Prize 2013, University of Michigan, Paper title: “A linear programming approach to constrained nonstationary infinite-horizon Markov decision processes”

PATENTS

Lee I., Kim S., Kim Y., Kim D., Cho H., Park J., Kim S., Interaction Service Providing Apparatus based on Combination of Users' Information. (In Korean)
Pub. No. KR 10-2012-0019011, March 6, 2012

Lee I., Kim S., Yoon S., Kim J., Park J., Lee S., Kim S., Park S., Database Regularity Apparatus and its Method, it Used Speech Understanding Apparatus and its Method. (In Korean)
Pub. No. KR 10-2011-0024074, March 9, 2011

Lee I., Cho H., Yoon S., Park J., Park S., Automatic Interpretation Apparatus and its Method. (In Korean)
Pub. No. KR 10-2010-0068965, June 24, 2010

Updated: November 15, 2018