TAEWOO LEE

Department of Industrial Engineering
University of Houston
E209 Engineering Bldg 2, 4722 Calhoun Rd
Houston, TX 77204-4008
Tel: 731-743-3361
Email: tlee6 [at] UH [dot] edu

EMPLOYMENT

Assistant Professor 2017-
Department of Industrial Engineering, University of Houston

Postdoctoral Fellow 2015-2016
Department of Computational and Applied Mathematics, Rice University

---

EDUCATION

Ph.D., Operations Research 2015
University of Toronto, Toronto, ON, Canada

RESEARCH

Journal publications (*authors ordered alphabetically for OR/MS journals)

[1] *A. Babier, T. C. Y. Chan, T. Lee, R. Mahmood, D. Terekhov, "An ensemble learning framework for model fitting and evaluation in inverse linear optimization," *INFORMS Journal on Optimization*, Forthcoming, 2020

[2] *T. C. Y. Chan, T. Lee, D. Terekhov, "Inverse optimization: Closed-form solutions, geometry and goodness of fit," *Management Science*, 65 (3), 1115-1135, 2019

[3] *T. C. Y. Chan, T. Lee, "Trade-off preservation in inverse multi-objective convex optimization," *European Journal of Operational Research*, 270 (1), 25-39, 2018

[4] *K. Ghobadi, T. Lee, H. Mahmoudzadeh, D. Terekhov, "Robust inverse optimization," *Operations Research Letters*, 46 (3), 339-344, 2018

[5] O. Tavaslioglu, T. Lee, S. Valeva, A. J. Schaefer, "On the structure of the inverse-feasible region of a linear program," *Operations Research Letters*, 46 (1), 147-152, 2018

[6] J. J. Boutilier, T. Lee, T. Craig, M. B. Sharpe, T. C. Y. Chan, "Models for predicting objective function weights in prostate cancer IMRT," *Medical Physics*, 42 (4), 1586-1595, 2015

[7] *T. C. Y. Chan, T. Craig, T. Lee, M. B. Sharpe, "Generalized inverse multi-objective optimization with application to cancer therapy," *Operations Research*, 62 (3), 680-695, 2014

[8] T. Lee, M. Hammad, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Predicting objective function weights from patient anatomy in prostate IMRT treatment planning," *Medical Physics*, 40 (12), 121706, 2013

Conference publications

[1] T. Lee, P. Dorali, Z. Shahmoradi, C.Y. Weng, "Developing behavior-based diabetic retinopathy screening guidelines," Accepted for publication at *Investigative Ophthalmology & Visual Science*

[2] P. Dorali, R. G. L. Cifelli, C. Y. Weng, T. Lee, "Location-based analysis on optimizing teleretinal imaging accessibility in a large safety-net system," Accepted for publication at *Investigative Ophthalmology & Visual Science*

[3] P. Dorali, R. Limongi, C. Weng, T. Lee, "Cost-effectiveness analysis for population-based teleretinal diabetic retinopathy screening policies in an urban healthcare system," *Investigative Ophthalmology & Visual Science (IOVS)*, 61 (7), 3072, 2020

[4] T. Lee, P. Dorali, Z. Shahmoradi, C. Weng, "Personalized teleretinal screening recommendations for patients with diabetes mellitus," *Investigative Ophthalmology & Visual Science (IOVS)*, 61 (7), 829, 2020

[5] J. J. Boutilier, T. C. Y. Chan, T. Craig, T. Lee, M. B. Sharpe, "A logistic regression model to predict objective function weights in prostate cancer IMRT," *Medical Physics*, 41 (6), 395, 2014

[6] T. Lee, M. Hammad, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Predicting objective function weights for IMRT prostate treatment planning using patient anatomy," *Medical Physics*, 40 (6), 356, 2013

[7] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Determining critical objectives and importance factors for prostate IMRT treatment planning," *Medical Physics*, 39 (6), 3845, 2012

[8] T. C. Y. Chan, T. Lee, T. Craig, M. B. Sharpe, "Determining objective function weights in prostate IMRT using inverse optimization," *Medical Physics*, 38 (6), 3687, 2011

Work in progress/under review **(title tentative; draft available)**

- "Quantile inverse optimization: Improving stability in inverse linear programming"
- "Personalized teleretinal screening recommendations for patients with diabetes mellitus"
- "Cost-effectiveness analysis for population-based teleretinal diabetic retinopathy screening policies in an urban healthcare system"
- "Approximate submodularity and its implications in discrete optimization"
- "Optimizing lung transplantation waitlist composition from the transplant programs perspective"
- "Objective selection for cancer treatment: An inverse optimization approach"

Selected conference presentations (presented by students or myself)

[1] T. Lee, P. Dorali, Z. Shahmoradi, C.Y. Weng, "Developing Behavior-Based Diabetic Retinopathy Screening Guidelines," ARVO Annual Meeting, May 2021

[2] P. Dorali, R. G. L. Cifelli, C. Y. Weng, T. Lee, "Location-Based Analysis on Optimizing Teleretinal Imaging Accessibility in a Large Safety-Net System," ARVO Annual Meeting, May 2021

[3] T. Lee, "Optimal Resource Allocation for Diabetic Eye Disease Screening for Minority Patients," 2021 CMS Quality Conference, March 2021

[4] T. Lee, P. Dorali, Z. Shahmoradi, C. Weng, "Personalized Teleretinal Screening Recommendations For Patients With Diabetes Mellitus," INFORMS Annual Meeting 2020, November 2020

[5] T. Lee, Z. Shahmoradi, "Optimality-based Clustering: An Inverse Optimization Approach," INFORMS Annual Meeting 2020, November 2020

[6] Z. Shahmoradi, T. Lee, "Quantile Inverse Optimization: Improving Stability in Inverse Linear Programming," INFORMS Annual Meeting 2020, November 2020

[7] P. Dorali, R. Limongi, C. Weng, T. Lee, "Cost-effectiveness analysis for population-based teleretinal diabetic retinopathy screening policies in an urban healthcare system," ARVO Annual Meeting, May 2020

[8] T. Lee, P. Dorali, Z. Shahmoradi, C. Weng, "Personalized teleretinal screening recommendations for patients with diabetes mellitus," ARVO Annual Meeting, May 2020

[9] Z. Shahmoradi, T. Lee, "Optimality-based clustering," 2019 Conference on Artificial Intelligence, Machine Learning, and Business Analytics, Philadelphia, PA, December 2019

[10] T. Lee, "Trade-off preservation in inverse multi-objective convex optimization," INFORMS Annual Meeting 2019, Seattle, WA, October 2019

[11] P. Dorali, T. Lee, "Optimal timing of teleretinal screening for diabetic eye disease," INFORMS Annual Meeting 2019, Seattle, WA, October 2019

[12] Z. Shahmoradi, T. Lee, "Quantile inverse optimization: Improving stability in inverse linear programming," INFORMS Annual Meeting 2019, Seattle, WA, October 2019

[13] T. Ajayi, T. Lee, A. J. Schaefer, "Best objective selection in radiation therapy treatment planning," INFORMS Annual Meeting 2019, Seattle, WA, October 2019

[14] T. Lee, Z. Shahmoradi, "Learning preferences from noisy data using inverse linear programming with application to diet guidelines," INFORMS Healthcare 2019, Boston, MA, July 2019

[15] T. Lee, Z. Shahmoradi, "Quantile inverse optimization: Improving stability in inverse optimization," INFORMS Healthcare 2019, Boston, MA, July 2019

[16] P. Dorali, T. Lee, "Optimal timing of teleretinal screening for diabetic eye disease," INFORMS Annual Healthcare 2019, Boston, MA, July 2019

[17] T. Lee, "Inferring objective functions from noisy and uncertain data in healthcare applications," POMS Annual Conference 2019, Washington D.C., May 2019

[18] T. Lee, "Automated knowledge-based radiation therapy treatment planning: optimization and learning approach," 4th International Conference on Big Data and Information Analytics, Houston, TX, December 2018

[19] T. Lee, "Tradeoff preservation in inferring objective function weights in multiobjective optimization," INFORMS Annual Meeting, Phoenix, AZ, November 2018

[20] T. Lee, Z. Shahmoradi, "Inferring objective functions from inconsistent data in healthcare and energy applications," INFORMS Annual Meeting, Phoenix, AZ, November 2018

[21] T. Ajayi, T. Lee, A. J. Schaefer, "Data-driven objective selection in multi-objective optimization," INFORMS Annual Meeting, Phoenix, AZ, November 2018

[22] T. Lee, "Knowledge-based, multicriteira radiation therapy treatment planning," University of Houston, College of Engineering, November 2018

[23] T. Lee, T. Ajayi, A. J. Schaefer, "Data-driven criteria selection in radiation therapy treatment planning," IISE Annual Meeting, Orlando, FL, May 2018

[24] T. Ajayi, T. Lee, A. J. Schaefer, "Data-driven objective selection in multi-objective optimization," INFORMS Computing Society Conference, Austin, TX, January 2017

[25] T. Lee, K. Ghobadi, H. Mahmoudzadeh, D. Terekhov, "Robust inverse optimization with application to dietary recommendation," INFORMS Annual Meeting, Houston, TX, October 2017

[26] T. Ajayi, T. Lee, A. J. Schaefer, "Data-driven objective selection in multi-objective optimization," INFORMS Annual Meeting, Houston, TX, October 2017

[27] T. Lee, "Data-driven objective selection in multi-objective optimization," University of Waterloo, Department of Management Science, September 2017

[28] T. Lee, T. Ajayi, A. J. Schaefer, "Data-driven objective selection in multi-objective optimization: inverse optimization approach," INFORMS Annual Meeting, Nashville, TN, November 2016

[29] T. Lee, K. Ghobadi, H. Mahmoudzadeh, D. Terekhov, "Robust inverse optimization," CORS Annual Conference, Banff, AB, June 2016

[30] T. Lee, "Generalized inverse optimization with applications to cancer therapy," University of Houston, Department of Industrial Engineering, April 2016

[31] T. Lee, "Learning trade-offs in multicriteria optimization for radiation therapy," INFORMS Annual Meeting, Philadelphia, PA, November 2015

[32] T. Lee, T. C. Y. Chan, "Inverse optimization for multi-objective optimization," INFORMS 2015, Philadelphia, PA, November 2015

[33] T. Lee, "Generalized inverse optimization with applications to cancer therapy," University of Houston, Department of Industrial Engineering, November 2015

[34] T. Lee, "Generalized inverse optimization with applications to cancer therapy," Rice University, Department of Computational and Applied Mathematics, November 2015

[35] T. Lee, "Generalized inverse optimization with applications to cancer therapy," Seoul National University, Department of Industrial Engineering, June 2015

[36] T. Lee, "Generalized inverse optimization with applications to cancer therapy," POSTECH, Department of Industrial and Management Engineering, June 2015

[37] T. Lee, T. C. Y. Chan, "Learning trade-offs in multicriteria optimization for radiation therapy," CORS/INFORMS International, Montreal, QC, June 2015

[38] T. Lee, "Generalized inverse optimization with applications to cancer therapy," Purdue University, School of Industrial Engineering, April 2015

[39] T. Lee, "Generalized inverse optimization with applications to cancer therapy," University of Illinois Urbana-Champaign, ISE, February 2015

[40] T. Lee, T. C. Y. Chan, "Preference preservation in radiation therapy treatment planning via inverse convex optimization," INFORMS 2014, San Francisco, CA, Nov 2014

[41] T. Lee, T. C. Y. Chan, "Preference learning in radiation therapy treatment planning via inverse convex optimization," CORS 2014, Ottawa, ON, May 2014

[42] T. Lee, M. Hammad, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Predicting objective function weights for multi-criteria IMRT planning using patient anatomy," INFORMS 2013, Minneapolis, MN, Oct 2013

[43] T. Lee, M. Hammad, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Predicting objective function weights for IMRT prostate treatment planning using patient anatomy," AAPM 2013, Indianapolis, IN, Aug 2013

[44] T. Lee, M. Hammad, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Predicting objective function weights for multi-criteria IMRT planning using patient anatomy," INFORMS Healthcare 2013, Chicago, IL, June 2013

[45] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Generalized inverse multi-objective optimization with application to cancer therapy," INFORMS Healthcare 2013, Chicago, IL, June 2013

[46] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Generalized inverse multi-objective optimization with application to cancer therapy," CORS 2013, Vancouver, BC, May 2013

[47] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Determining convex objective functions in the multi-objective IMRT treatment planning problem," INFORMS 2012, Phoenix, AZ, Oct 2012

[48] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Determining critical objectives and importance factors for prostate IMRT treatment planning," AAPM 2012, Charlotte, NC, July 2012

[49] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "Determining critical objective functions for a multi-objective IMRT treatment planning problem," CORS 2012, Niagara Falls, ON, June 2012

[50] T. Lee, T. C. Y. Chan, T. Craig. M. B. Sharpe, "Approximate inverse optimization for intensity-modulated radiation therapy planning," INFORMS Healthcare 2011, Montreal, QC, June 2011

[51] T. Lee, T. C. Y. Chan, T. Craig, M. B. Sharpe, "An inverse optimization approach to determine objective function weights in radiation therapy," INFORMS 2010, Austin, TX, Nov 2010

AWARDS and HONORS

INFORMS Junior Faculty Best Paper Award – MCDM (Finalist)	2019
Outstanding Teacher Award – Department of Industrial Engineering, University of Houston	2019
INFORMS New Faculty Colloquium	2017
IISE New Faculty Colloquium	2017
INFORMS Doctoral Colloquium	2014
Canadian Operational Research Society (CORS) Paper Competition (Winner)	2013
INFORMS Healthcare Applications Society (HAS) Paper Competition (Winner)	2013
The Queen Elizabeth II Graduate Scholarships in Science and Technology	2013
Natural Sciences and Engineering Research Council of Canada (NSERC) CREATE	2010–2013
Ontario Graduate Scholarship (OGS)	2012
MITACS Accelerate	2012
The Queen Elizabeth II Graduate Scholarships in Science and Technology	2011
Barbara and Frank Milligan Fellowship	2010

TEACHING

INDE3333: Engineering Economy (Undergrad)	2018S (4.60/5; N=53)
	2017S (4.72/5; N=24)
INDE3382: Stochastic Models (Undergrad)	2020F (4.70/5; N=26)
	2019F (4.70/5; N=16)
	2018F (4.80/5; N=21)
	2017F (4.80/5; N=26)
INDE7397: Decision Modeling under Uncertainty (Grad)	2020S (5/5; N=8)
	2019S (5/5; N=3)

SERVICE

Journal Review

Annals of Operations Research
Computers & Industrial Engineering
European Journal of Operational Research
IISE Transactions
INFORMS Journal on Computing
Management Science
Manufacturing and Service Operations Management (MSOM)
Medical Physics
Omega
Operations Research
Operations Research for Health Care
Optimization and Engineering
Optimization Letters
Physics in Medicine and Biology
Production and Operations Management (POM)
SIAM Journal on Optimization
Socio-Economic Planning Sciences

Conference Cluster/Session Chair/Committee

Data-driven inverse optimization, INFORMS 2020, Remote
Innovations in community-based screening, ARVO 2020, Baltimore, MD
Area Chair of OR in Health, Medicine and Life Science, IFORS 2020, Seoul, South Korea
Optimization under uncertainty, IFORS 2020, Seoul, South Korea
Inverse optimization in healthcare applications, INFORMS 2019, Seattle, WA
Data and models in healthcare operations, INFORMS Healthcare 2019, Boston, MA
Data-driven modeling in healthcare, INFORMS 2018, Phoenix, AZ
Data-driven decision making in healthcare, INFORMS 2017, Houston, TX
Healthcare logistics with uncertainty, IFORS 2017, Quebec City, QC
Inverse optimization, IFORS 2017, Quebec City, QC
Optimization in radiation therapy, INFORMS Computing Society 2017, Austin, TX
Inverse optimization: Theory, INFORMS 2016, Nashville, TN
Inverse optimization: Applications, INFORMS 2016, Nashville, TN
Optimization methods for cancer therapy, INFORMS International 2015, Montreal, QC
Optimization methods for radiation therapy, INFORMS International 2015, Montreal, QC
Inverse optimization in healthcare, INFORMS 2014, San Francisco, CA
Optimization in radiation therapy treatment planning, CORS 2014, Ottawa, ON
Optimization in radiation therapy treatment planning, INFORMS 2013, Minneapolis, MN