Ali İrfan Mahmutoğulları

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Areas of Interest

Risk-averse optimization, stochastic programming, mixed-integer programming, reinforcement learning.

Google Scholar Profile: https://scholar.google.com/citations?user=muyZLrYAAAAJ

Education and Background

Visiting researcher at H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology, October 2017 - July 2018.
Host faculty: Shabbir Ahmed

Ph.D. in Industrial Engineering, Bilkent University
September 2013 - January 2019
Thesis Title: Risk-Averse Multi-stage Mixed-integer Programming
Advisors: Özlem Çavuş and Selim Aktürk

M.Sc. in Industrial Engineering, Bilkent University
September 2011 - June 2013
Thesis Title: Competitive Hub Location Problem
Advisor: Bahar Yetiş Kara

B.Sc. in Industrial Engineering, Bilkent University
September 2007 - June 2011

Publications

The Value of Multi-stage Stochastic Programming in Risk-averse Unit Commitment under Uncertainty, *IEEE Transactions on Power Systems*, 2019, accepted for publication. (joint work with S. Ahmed, Ö. Çavuş and M. S. Aktürk)

An exact solution approach for risk-averse mixed-integer multi-stage stochastic programming problems, *Annals of Operations Research*, 2019, accepted for publication. (joint work with Ö. Çavuş and M. S. Aktürk)

Bounds on risk-averse mixed-integer multi-stage stochastic programming problems with mean-CVaR, *European Journal of Operational Research*, 2018, 226(2), 595-608. (joint work with Ö. Çavuş and M. S. Aktürk)

Hub location under competition, *European Journal of Operational Research*, 2016, 250(1), 214-225. (joint work with B. Y. Kara)

Hub location problem with allowed routing between non-hub nodes, *Geographical Analysis*, 2015, 47(4), 410-430. (joint work with B. Y. Kara)

Progressive hedging algorithm for risk-averse multi-stage stochastic programming problems, In progress. (joint work with Ö. Çavuş)

Approximations to risk-averse multi-stage stochastic programming problems. (joint work with S. Ahmed and Ö. Çavuş)

A deep reinforcement learning algorithm for multistage stochastic programming problems. (joint work with S. Ahmed and C. H. Lim)

Talks/Presentations/Seminars

The value of multi-stage stochastic programming in risk-averse unit commitment problems (poster presentation). 2018 Mixed Integer Programming Workshop, Greenville, SC, June 18-21, 2018.

Risk-averse multi-stage stochastic programming. ISyE student seminar, Atlanta, GA, February 9, 2018.

Scenario group approach for risk averse mixed-integer multi-stage stochastic programming problems with dynamic mean-CVAR. INFORMS Annual Meeting, Houston, TX, October 22-25, 2017.

Hub location under competition. International Network Optimization Conference, Universidad de La Laguna, Tenerife, Spain, 20-22 May 2013.

Hub location under competition. THE EURO Working Group on Locational Analysis XX, TOBB University of Economics and Technology, Ankara, Turkey, 17-19 April 2013.

Hub location problem with allowed routing between non-hub nodes. THE EURO Working Group on Locational Analysis XIX, IRCCyN Laboratory, Nantes, France, 12-14 October 2011.

Rekabet Ortaminda Ana Dagitim Ussu Yer Secimi Problemi(in Turkish) Hub Location Problem in Competitive Environment. 32nd National Operations Research and Industrial Engineering Congress (YAEM, 2012), Dogus University, Istanbul, Turkey, 20-22 June 2012.

Turk Kizilayi Icin Merkezi Afet Yonetiminde Karar Destek Sistemi Tasarimi (in Turkish) Decision Support System Design for Turkish Red Crescent. (Student Project Contest Finalist) 31st National Operations Research and Industrial Engineering Congress (YAEM, 2011), Sakarya University, Sakarya, Turkey, 5-7 July 2011.

Honors and Awards

Bilkent University Department of Industrial Engineering, Research Excellence in Ph.D Studies. June, 2018.

Tubitak International Research Fellowship. October 2017 - July 2018.

Tubitak National Scholarship Program for Ph.D. Students. September 2013 - August 2019.

Tubitak National Scholarship Program for M.Sc. Students. September 2011 - August 2013.

B.Sc. Graduation with High Honor Degree. Spring 2011.

Bilkent University Comprehensive Scholarship. Fall 2007 - Spring 2011.

Teaching Experience

Instructor at TED University

   IE332-Mathematical Modeling & Optimization III (2019 Spring)

Part-Time Instructor at TED University

   IE464/527-Distribution Logistics (2018 Fall)

Teaching assistant at Bilkent University:

   IE202-Introduction to Modeling and Optimization (2013 Spring)

   IE303-Modeling and Methods in Optimization (2011 Fall, 2012 Fall)

   IE325-Stochastic Models (2015 Fall, 2016 Fall)

   IE400-Principles of Engineering Management (2014 Fall)

   IE432-Quantitative Risk Management (2015 Spring, 2016 Spring, 2017 Spring, 2018 Fall)

   IE505-Mathematical Programming (2013 Fall)

Computer Skills

Java, Visual Basic, GAMS, Xpress, CPLEX, Gurobi, Arena, Matlab, Python, R.

Last Update: March 4, 2019