Berk Görgülü

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RESEARCH INTERESTS

Service and healthcare operations, healthcare analytics, stochastic modeling and optimization, queueing theory, interpretable machine learning

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WORK EXPERIENCE

DeGroote School of Business, McMaster University, Hamilton, ON, Canada

Assistant Professor   2023 - current

EDUCATION

University of Toronto, Toronto, ON, Canada

Ph.D. in Mechanical and Industrial Engineering   2018 - 2023
- Advisors: Vahid Sarhangian and Jing Dong
- GPA: 4.00/4.00

Boğaziçi University, Istanbul, Turkey

M.S. in Industrial Engineering   2017 - 2018
- Advisor: Mustafa Gökçe Baydoğan
- GPA: 4.00/4.00

B.S. in Industrial Engineering   2012 - 2017
- GPA: 3.70/4.00

Minor in Management (Finance)   2012 - 2017
- GPA: 4.00/4.00

WORKING PAPERS

1. **Approximate Dynamic Programming for Multiclass Scheduling under Slowdown.** With Jing Dong and Vahid Sarhangian. Working Paper.

2. **What Causes Delays in Admission to Rehabilitation Care? A Structural Estimation Approach**. With Jing Dong and Vahid Sarhangian. Under minor revision for *Manufacturing & Service Operations Management*.

   - Selected for presentation at the 2022 Healthcare Operations SIG at MSOM Conference.

3. **The Value of Advance Surgery Booking Information for Inventory Management of Surgical Supplies.** With Jacky Chan and Vahid Sarhangian. Under minor revision for *Manufacturing & Service Operations Management*.

4. **Column Generation Approach to Solve Classification Problems with Class Imbalance**. With Erhan Can Ozcan and Mustafa Gökçe Baydoğan. Under minor revision for *European Journal of Operations Research*.

5. **Inteptretable Machine Learning for Personalized Breast Cancer Screening Recommendations.** With Sean Berry, Mucahit Cevik and Sait Tunc. Working Paper.

6. **Machine Learning-based Kidney Allocation for High-Risk Kidneys.** With Sean Berry, Mucahit Cevik and Sait Tunc. Working Paper.

PUBLISHED PAPERS

1. **A Newsvendor Approach to Design of Surgical Preference Cards**. With Vahid Sarhangian. *Service Science*. 2022, forthcoming.

2. **Association Between Delayed Discharge from Acute Care and Rehabilitation Outcomes and Length-of-Stay: A Retrospective Cohort Study**. With Jing Dong, Karen Hunter, Krista M. Bettio, Betty Vukusic, Jonathan Ranisau, Gary Spencer, Terence Tang and Vahid Sarhangian. *Archives of Physical Medicine and Rehabilitation*, 2022, forthcoming.

3. **Randomized trees for time series representation and similarity**. With Mustafa Gökçe Baydoğan. *Pattern Recognition*, 120, 2021. pp. 108097.

4. **Explainable boosted linear regression for time series forecasting.** With Igor Ilic, Mucahit Cevik and Mustafa Gökçe Baydoğan. *Pattern Recognition*. 120, 2021. pp. 108144.

5. **Augmented out-of-sample comparison method for time series forecasting techniques.** With Igor Ilic and Mucahit Cevik. *Canadian Conference on Artificial Intelligence*. 2020. pp. 302-308.

6. **An Adaptive Large Neighborhood Search Heuristic for Jointly Solving Storage Location Assignment and Picker Routing**. With Necati Aras. *Operations Research Proceedings 2018: Selected Papers of the Annual International Conference of the German Operations Research Society (GOR)*, 2018. pp. 301-308.

7. **A Data Adaptive Biological Sequence Representation for Supervised Learning**. With Hande Cakin, Mustafa Gökçe Baydoğan, Na Zou and Jing Li. *Journal of Healthcare Informatics Research*, 2(4), 2018. pp. 448-471.

HONORS AND AWARDS

SGS Conference Grant 2022

MIE Teaching Assistant Award 2021

Doctoral Fellowship, Department of Mechanical & Industrial Engineering, University of Toronto 2018 - 2022

University Dean's High Honor List 2012 - 2017
Placed in Dean's High Honor List for 8 consecutive semesters (all semesters)

TEACHING EXPERIENCE

University of Toronto, Toronto, ON, Canada
Teaching Assistant

- MIE 360 - System Modelling & Simulation — Fall 2018, 2019, 2020, 2021, 2022
- MIE 335 - Algorithms & Numerical Methods — Winter 2019, 2020, 2021, 2022, 2023

Boğaziçi University, Istanbul, Turkey
Teaching Assistant

- IE 360 - Statistical Forecasting & Time Series — Winter 2018
- IE 312 - Facility Design & Planning — Fall 2016, Winter 2017, Fall 2017
- IE 306 - System Simulation — Fall 2015

CONFERENCE PRESENTATIONS

Approximate Dynamic Programming for Multiclass Scheduling under Slowdown

- INFORMS Annual Meeting, Phoenix, AZ — October 2023
- INFORMS Healthcare, Toronto, ON — July 2023
- M&SOM Conference, Montreal, QC — June 2023

What Causes Delays in Admission to Rehabilitation Care? A Structural Estimation Approach

- INFORMS Healthcare, Toronto, ON   July 2023
- INFORMS Annual Meeting, Indianapolis, IN   Oct. 2022
- INFORMS Annual Meeting, Online   Nov. 2021
- CORS Annual Meeting, Online   July 2020
- MSOM Annual Conference, Online   June 2020
- INFORMS Annual Meeting, Seattle, WA   Nov. 2019
- INFORMS Annual Meeting, Phoenix, AZ   Nov. 2018

A Newsvendor Approach to Design of Surgical Preference Cards

- CORS Annual Meeting, Online   July 2020
- INFORMS Healthcare Conference, MIT, Cambridge, MA   July 2019

Randomized trees for time series representation and similarity

- INFORMS Annual Meeting, Phoenix, AZ   Nov. 2018