Özge Sürer

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Department of Industrial Engineering and Management Sciences   ozgesurer2019@u.northwestern.edu
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EDUCATION

Northwestern University   Evanston, IL
Ph.D. in Industrial Engineering and Management Sciences   *September 2020*

    Advisors: Professors Daniel W. Apley, Edward C. Malthouse

    Thesis: Predictive Models for Group-Structured Regression and Classification Problems

    Major in *Applied Statistics & Statistical Learning*; Minors in *Analytics* and *Optimization*

    Center for the Integration of Research, Teaching and Learning (CIRTL) Scholar   *June 2019*

Boğaziçi University   İstanbul, Turkey
M.S. in Industrial Engineering   *January 2014*

    Advisor: Professor İ. Kuban Altinel

    Thesis: Event and Clock-Based Representations of Time in Mathematical Optimization

İstanbul Technical University   İstanbul, Turkey
B.S. in Industrial Engineering   *June 2011*

RESEARCH INTERESTS

Methodology: Statistical and Machine Learning, Predictive Models, Data Analysis/Mining
Applications: Recommender Systems, Public Health, Nuclear Physics

ACADEMIC EXPERIENCE

Northwestern Argonne Institute of Science and Engineering   Evanston, IL
Postdoctoral Research Fellow   *January 2021 – Present*

    Supervisors: Assistant Professor Matthew Plumlee, Sr. Research Scientist Dr. Stefan Wild

    Topics: Bayesian statistical methodology and its applications in machine learning including Gaussian processes, tree models, and dimension reduction, computational statistical inference including multi-model emulators, uncertainty quantification for parameters, model calibrators, and model mixing

Northwestern University   Evanston, IL
Postdoctoral Research Fellow, Industrial Engineering and Management Sciences   *September 2020 – December 2020*

    Supervisor: Professor David Morton

    Topics: Reopening strategy optimization and vaccine planning tool for COVID-19

TEACHING EXPERIENCE

Northwestern University   Evanston, IL
Instructor, Industrial Engineering and Management Sciences Department   *Spring 2019*

- IEMS 303 Statistics (Undergraduate level)

    Class size: 29, Instructor overall effectiveness: 5.35/6.00
    Topics: Foundations of statistics and statistical computing for data analysis, descriptive statistics and statistical inference
    Teaching project: Implemented a project titled "Confidence in Learning Statistics with R Programming Language" as a participant of the Searle Center Teaching-As-Research program

Teaching Assistant, Industrial Engineering and Management Sciences Department

- IEMS 202 Probability (Undergraduate level)   Winter 2017, Spring 2018
- IEMS 303 Statistics (Undergraduate level)   Fall 2016/2018, Winter 2019, Spring 2020

Teaching Assistant, Master of Science in Analytics

- MSIA 421 Data Mining   Winter 2018

Grader, Master of Engineering Management
- MEM 407 Decision Tools for Managers   Fall 2017, Winter 2018

Bootcamp Instructor, Industrial Engineering and Management Sciences Department
- Statistics (Ph.D. level)   Fall 2016

Professional Experience

United Airlines   Chicago, IL
Statistics and Operations Research Intern   *June 2019 – September 2019*

   Topics: Spill & recapture model for predicting the future demand, benchmark studies through data analysis techniques and visualization, decomposition methods to more accurately and efficiently model spill and recapture

Northwestern University   Evanston, IL
Research Fellow, Spiegel Digital & Database Research Center   *September 2016 – September 2020*

   Topics: Recommender systems in multisided platforms, data analytics

Under Review/In Preparation

[1] **Özge Sürer**, Matthew Plumlee. Machine learning-based calibration for filtered data. In preparation.

[2] **Özge Sürer**, Nazlican Arslan, David Morton. Design of COVID-19 vaccine planning tool. In preparation.

[3] Haoxiang Yang, **Özge Sürer**, Daniel Duque, David Morton, Bismark Singh, Spencer Fox, Remy Pasco, Kelly Pierce, Paul Rathouz, Zhanwei Du, Michael Pignone, Mark E. Escott, Stephen I. Adler, S. Clairborne Johnston, Lauren Ancel Meyers. Design of COVID-19 staged alert systems to ensure healthcare capacity with minimal closures. Under-revision.

[4] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression: Fast, accurate and interpretable predictive modeling. Under-revision.

[5] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering structure in generalized linear models. Under-revision.

[6] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Discovering structure in longitudinal data via coefficient tree regression. In preparation.

Conference Proceedings & Technical Reports

[1] Haoxiang Yang, Daniel Duque, **Özge Sürer**, David Morton, Remy Pasco, Kelly Pierce, Spencer Fox, Lauren Ancel Meyers. Staged strategy to avoid hospital surge and preventable mortality, while reducing the economic burden of social distancing measures. Technical Report. 2020.

[2] **Özge Sürer**, Robin Burke, Edward C. Malthouse. Multistakeholder recommendation with provider constraints. *Proceedings of the 12th ACM Conference on Recommender Systems*, 54–62, 2018 (Acceptance rate: 18%).

[3] **Özge Sürer**. Improving similarity measures using ontological data. *Proceedings of the 11th ACM Conference on Recommender Systems*, 416–420, 2017 (Acceptance rate: 16.4%).

Journal Publications

[1] Seda Yanik, **Özge Sürer**, Başar Öztayşi. Designing sustainable energy regions using genetic algorithms and location-allocation approach. *Energy*, 161–172. 2016.

Book Chapters

[1] **Özge Sürer**, Sezi Çevik Onar, İlker Topçu. Innovation strategy evaluation process using fuzzy cognitive mapping. *Intelligent Techniques in Engineering Management*, 107–128, 2015.

[2] Başar Öztayşi, **Özge Sürer**. Supply chain performance measurement using a SCOR based fuzzy VIKOR approach. *Supply Chain Management Under Fuzziness*, 199–224, 2014.

Presentations & Invited Talks

[1] **Özge Sürer**. Coefficient tree regression: Fast, accurate and interpretable predictive modeling. *Alberta School of Business*, University of Alberta, Alberta, Canada, 2020.

[2] **Özge Sürer**. Coefficient tree regression: Fast, accurate and interpretable predictive modeling. *David Nazarian College of Business and Economics*, California State University, Northridge, CA, 2020.

[3] **Özge Sürer**. Coefficient tree regression: Fast, accurate and interpretable predictive modeling. *Tippie College of Business*, University of Iowa, Iowa City, IA, 2019.

[4] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering structure in generalized linear models. *INFORMS Annual Meeting*, Seattle, WA, 2019.

[5] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Discovering structure in longitudinal data via coefficient tree regression. *INFORMS Annual Meeting*, Seattle, WA, 2019.

[6] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering hidden structure. *INFORMS Annual Meeting*, Phoenix, AZ, 2018.

[7] **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering hidden structure. *The Midwest Machine Learning Symposium*, Chicago, IL, 2018.

[8] **Özge Sürer**, Robin Burke, Edward C. Malthouse. Multistakeholder recommendation with provider constraints. *The 12th ACM Conference on Recommender Systems*, Vancouver, Canada, 2018.

[9] **Özge Sürer**. Improving similarity measures using ontological data. *The 11th ACM Recommender Systems Doctoral Symposium*, Como, Italy, 2017.

[10] Gökalp Erbeyoğlu, **Özge Sürer**, Evren Güney, İ. Kuban Altinel, Necati Aras, Bora Çekyay, Gönenç Yücel. Influence maximization in social networks. *The 35th National Conference for Operations Research and Industrial Engineering*, Ankara, Turkey, 2015.

[11] **Özge Sürer**, İ. Kuban Altinel. Event and clock-based representations in mathematical optimization. *The 34th National Conference for Operations Research and Industrial Engineering*, Bursa, Turkey, 2014.

[12] **Özge Sürer**. Simulated annealing algorithm with variable cluster number and comparison with k-means algorithm. *The 26th European Conference on Operational Research*, Rome, Italy, 2013.

[13] **Özge Sürer**, Sezi Çevik Onar, İlker Topçu. A multi-criteria based evaluation of innovation strategy selection. *The 25th European Conference on Operational Research*, Vilnius, Lithuania, 2012.

Awards & Honors

- Walter P. Murphy Fellowship for outstanding first year PhD students at Northwestern, Evanston, IL, 2015–2016
- The Scientific and Technological Research Council of Turkey (TUBİTAK) Scholarship, Turkey, 2011–2015
- The Council of Higher Education (YÖK) Undergraduate Scholarship, Turkey, 2006–2011

Service & Professional Activities

- Session chair for Interpretable Predictive Models track, INFORMS, Seattle, WA, October 20–23, 2019
- Session chair for Intriguing Tweaks in Data Science I track, INFORMS, Phoenix, AZ, November 4–7, 2018
- Participant, INFORMS Doctoral Student Colloquium, Houston, TX, October 22–25, 2017
- Participant, The ACM Summer School on Recommender Systems, Como, Italy, August 21–25, 2017
- Conference organizing committee member, Global Conference on Engineering and Technology Management, İstanbul, Turkey, June 23–26, 2014
- Session chair for Health Economics track, Global Conference on Healthcare Systems Engineering, İstanbul, Turkey, August, 5–8, 2014
- Session chair for Artificial Intelligence, Fuzzy Systems track, EURO 2013, Rome, Italy, July 1–4, 2013

- CTR

  Open source R package for the application of coefficient tree regression (CTR)