

# Özge Sürer

Northwestern University, Department of Industrial Engineering and Management Sciences  
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## EDUCATION

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### Northwestern University

*Ph.D. candidate in Industrial Engineering and Management Sciences*

Advisors: Daniel W. Apley, Edward C. Malthouse

Thesis: Predictive Models for Group-Structured Regression Problems

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

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

Evanston, IL

*Anticipated June 2020*

*June 2019*

### Boğaziçi University

*M.S. in Industrial Engineering*

Advisor: İ. Kuban Altinel

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

İstanbul, Turkey

*January 2014*

### İstanbul Technical University

*B.S. in Industrial Engineering*

İstanbul, Turkey

*June 2011*

## RESEARCH INTERESTS

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I am broadly interested in applied statistical learning and predictive models. More specifically, I have been working on the design of interpretable predictive models for 1) linear regression, 2) generalized linear models, and 3) longitudinal datasets, and their interdisciplinary applications.

## PROFESSIONAL EXPERIENCE

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### United Airlines

*Statistics and Operations Research Intern*

Chicago, IL

*June 2019 – September 2019*

- Supported Spill & Recapture project team in benchmark studies through data analysis techniques and visualization
- Proposed a new approach for the existing column generation method to more accurately and efficiently model spill and recapture

### Northwestern University

*Research Fellow, Spiegel Digital & Database Research Center*

Evanston, IL

*September 2016 – Present*

- Collaborated with research groups at Northwestern and DePaul University to optimize recommender systems in multisided platforms
- Supported ShopRunner's data analytics research team as a consultant

## TEACHING EXPERIENCE

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### Northwestern University

*Instructor, Industrial Engineering and Management Sciences Department*

Evanston, IL

*Spring 2019*

- IEMS 303 Statistics (Undergraduate level)
  - Class size: 29, Instructor overall effectiveness: 5.35/6.00
  - Sole instructor for the course, which focuses on the foundations of statistics and statistical computing for data analysis and their applications, and covers descriptive statistics and statistical inference
  - Implemented a teaching project, titled "Confidence in Learning Statistics with R Programming Language," to improve student learning as a participant of The Searle Center Teaching-As-Research (STAR) 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
- MSIA 421 Data Mining (Master of Science in Analytics) Winter 2018

*Grader, Industrial Engineering and Management Sciences Department*

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

*Bootcamp Instructor, Industrial Engineering and Management Sciences Department*

- Statistics (Ph.D. level) Fall 2016

## UNDER REVIEW/IN PREPARATION

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- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression: Fast, accurate and interpretable predictive modeling. Under-revision for *Journal of the American Statistical Association*.
- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering structure in generalized linear models. In preparation.
- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Discovering structure in longitudinal data via coefficient tree regression. In preparation.

## CONFERENCE PROCEEDINGS

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- **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%).
- **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

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

## BOOK CHAPTERS

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

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- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering structure in generalized linear models. *INFORMS Annual Meeting*, Seattle, WA, 2019.
- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Discovering structure in longitudinal data via coefficient tree regression. *INFORMS Annual Meeting*, Seattle, WA, 2019.
- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering hidden structure. *INFORMS Annual Meeting*, Phoenix, AZ, 2018.
- **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for discovering hidden structure. *The Midwest Machine Learning Symposium*, Chicago, IL, 2018.
- **Özge Sürer**, Robin Burke, Edward C. Malthouse. Multistakeholder recommendation with provider constraints. *The 12th ACM Conference on Recommender Systems*, Vancouver, Canada, 2018.
- **Özge Sürer**. Improving similarity measures using ontological data. *The 11th ACM Recommender Systems Doctoral Symposium*, Como, Italy, 2017.
- Gökulp 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.
- **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.
- **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.
- **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

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- 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

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- 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

## SOFTWARE DEVELOPMENT

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- R “CTR” package: For the application of coefficient tree regression (CTR)