

Özge Sürer

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I. Summary of Education & Professional Experience

A. Education:

- PhD, Industrial Engineering and Management Sciences, Northwestern University, 2020.
- MS, Industrial Engineering and Management Sciences, Northwestern University, 2016.
- MS, Industrial Engineering, Boğaziçi University, 2014.
- BS, Industrial Engineering, İstanbul Technical University, 2011.

B. Professional Experience:

Miami University, Department of Information Systems and Analytics, Oxford, OH, USA
Assistant Professor **August, 2022 - present**

Northwestern University, Northwestern Argonne Institute of Science and Engineering, Evanston, IL, USA
Postdoctoral Research Fellow **January, 2021 - August, 2022**

Northwestern University, Industrial Engineering and Management Sciences, Evanston, IL, USA
Postdoctoral Scholar **October, 2020 - December, 2020**

Northwestern University, Industrial Engineering and Management Sciences, Evanston, IL, USA
Graduate Assistant **September, 2016 - August, 2020**

II. Teaching and Academic Advising

A. Courses Taught

Semester	Course	Credits	Enrollment	
Spring 2019	IEMS 303: Statistics	3 hrs	26	Northwestern University
Fall 2022	ISA 291C: Applied Regression Analysis	3 hrs	22	Miami University
	ISA 291D: Applied Regression Analysis	3 hrs	14	Miami University
Spring 2023	ISA 291A: Applied Regression Analysis	3 hrs	27	Miami University
	ISA 291B: Applied Regression Analysis	3 hrs	17	Miami University
Fall 2023	ISA 291A: Applied Regression Analysis	3 hrs	26	Miami University
	ISA 291B: Applied Regression Analysis	3 hrs	26	Miami University
Spring 2024	ISA 291B: Applied Regression Analysis	3 hrs	30	Miami University
	ISA 291C: Applied Regression Analysis	3 hrs	30	Miami University
Fall 2024	ISA 291C: Applied Regression Analysis	3 hrs	25	Miami University
	ISA 291E: Applied Regression Analysis	3 hrs	32	Miami University

B. Academic Advising

Doctoral student

Yuriy Volkotrub June–September 2021
Building a statistical method for quantifying the uncertainty in a physics model
Bayesian Analysis of Nuclear Dynamics Collaboration, Summer Fellow

Undergraduate students

Northwestern University, Industrial Engineering and Management Sciences Department

Justin Chen

June–September 2021

Integration of visualization and diagnostics modules to the Python package surmise

Huangda Shang (co-supervised with D. Morton)

September 2020–March 2021

Alternative solutions of COVID-19 staged alert systems via derivative-free optimization methods

Aneesh Kudaravalli, Katherine Johns, Margot Dupeyroux,

Robert Wong, Yun Hwan Choi (co-supervised with D. Morton)

September–December 2020

Investigation of different trigger metrics for COVID-19 staged alert systems

Achyut Kasi, Cindy Sanchez (co-supervised with D. Morton)

June–September 2020

Development of a module to produce graphs and reports automatically for the COVID-19 staged alert system

III. Research

A. Refereed Articles that Appeared In Print and/or Online

10. **Özge Sürer**. Simulation experiment design for calibration via active learning. *Accepted at Journal of Quality Technology*, 2024. ([link](#)).
9. Sara Shashaani, **Özge Sürer**, Matthew Plumlee, Seth Guikema. Building trees for probabilistic prediction via scoring rules. *Technometrics*, 2024. ([link](#)).
8. Dan Liyanage, **Özge Sürer**, Matthew Plumlee, Stefan M. Wild, Ulrich Heinz. Bayesian calibration of viscous anisotropic hydrodynamic simulations of heavy ion collisions. *Physical Review C*, 108, 054905, 2023. ([link](#)).
7. **Özge Sürer**, Matthew Plumlee, Stefan M. Wild. Sequential Bayesian experimental design for calibration of expensive simulation models. *Technometrics*, 2023. ([link](#)).
6. **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Discovering interpretable structure in longitudinal data via coefficient trees. *Advances in Data Analysis and Classification*, 2023. ([link](#)).
5. **Özge Sürer**, Filomena M. Nunes, Matthew Plumlee, Stefan M. Wild. Uncertainty quantification in breakup reactions. *Physical Review C*, 106, 024607, 2022. ([link](#)).
4. **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression: fast, accurate and interpretable predictive modeling. *Machine Learning*, 1–38, 2021. ([link](#)).
3. **Özge Sürer**, Daniel W. Apley, Edward C. Malthouse. Coefficient tree regression for generalized linear models. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 14, 407–429, 2021. ([link](#))
2. Haoxiang Yang, **Özge Sürer**, Daniel Duque, David P. 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. *Nature Communications*, 12, 3767, 2021. ([link](#))
1. Seda Yanik, **Özge Sürer**, Başar Öztaş. Designing sustainable energy regions using genetic algorithms and location-allocation approach. *Energy*, 161–172, 2016. ([link](#))

B. Peer Reviewed Conference Proceedings

3. **Özge Sürer**, Matthew Plumlee. Calibration using emulation of filtered simulation results. *Winter Simulation Conference*, 2021. ([link](#))
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. ([link](#))
1. **Özge Sürer**. Improving similarity measures using ontological data. *Proceedings of the 11th ACM Conference on Recommender Systems*, 416–420, 2017. ([link](#))

C. Technical Reports

5. Matthew Plumlee, **Özge Sürer**, Stefan M. Wild. Surmise users manual, Version 0.1.0, NAISE, 2021. ([link](#))
4. Paul J. Rathouz, Victoria Valencia, Patrick Chang, David P. Morton, Haoxiang Yang, **Özge Sürer**, Spencer J. Fox, Elizabeth C. Matsui, Alex B. Haynes, Lauren A. Meyers. Survival analysis methods for analysis of hospitalization data: Application to COVID-19 patient hospitalization experience. Technical Report, 2021. ([link](#))
3. Nazlican Arslan, **Özge Sürer**, David P. Morton, Haoxiang Yang, Michael Lachmann, Spencer Woody, Spencer J. Fox, Lauren Ancel Meyers. COVID-19 alert stages, healthcare projections and mortality patterns in Austin, Texas. Technical Report, 2021. ([link](#))
2. Haoxiang Yang, Michael Lachmann, **Özge Sürer**, Spencer J. Fox, David P. Morton, Lauren Ancel Meyers. Projecting need for a COVID-19 alternate care site (ACS) in Austin. Technical Report, 2021. ([link](#))
1. Haoxiang Yang, Daniel Duque, **Özge Sürer**, David P. 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. ([link](#))

D. Book Chapters

2. **Özge Sürer**, Sezi Çevik Onar, İlker Topçu. Innovation strategy evaluation process using fuzzy cognitive mapping. *Intelligent Techniques in Engineering Management*, 107–128, 2015. ([link](#))
1. Başar Öztayşı, **Özge Sürer**. Supply chain performance measurement using a SCOR based fuzzy VIKOR approach. *Supply Chain Management Under Fuzziness*, 199–224, 2014. ([link](#))

E. Contributed Conference Presentations and Invited Talks

20. The Joint Statistical Meetings (JSM), Portland, OR (August, 2024). *Simulation experiment design for calibration via active learning*.
19. The Design and Analysis of Experiments (DAE) Conference, Blacksburg, VA (May, 2024). *Sequential Bayesian experimental design for calibration of expensive simulation models*.
18. INFORMS Annual Meeting, Phoenix, AZ (October, 2023). *Performance analysis of sequential experimental design for calibration in parallel computing environments*.
17. The Center for Approximation and Mathematical Data Analytics (CAMDA) Conference, College Station, TX (May, 2023). *Sequential Bayesian experimental design for calibration of expensive simulation models*.

16. Information and Statistics in Nuclear Experiment and Theory (ISNET) Conference, St. Louis, MO (May, 2023). *Sequential Bayesian experimental design for calibration of expensive expensive physics models.*
15. 2022 Fall Meeting of the Division of Nuclear Physics of the American Physical Society, New Orleans, LA (October, 2022). *The Bayesian analysis of nuclear dynamics framework.*
14. INFORMS Annual Meeting, Indianapolis, IN (October, 2022). *Batch sequential calibration of a computationally intensive simulation model using parallel computing.*
13. SIAM Conference on Uncertainty Quantification, Atlanta, GA (April, 2022). *A sequential approach to calibration of a computationally intensive model.*
12. SIAM Conference on Parallel Processing for Scientific Computing, Seattle, WA (February, 2022). *Calibration of a computationally intensive model with parallel computing aspects.*
11. Winter Simulation Conference, Phoenix, AZ (December, 2021). *Calibration using emulation of filtered simulation results.*
10. INFORMS Annual Meeting, Anaheim, CA (October, 2021). *Calibration using emulation of filtered simulation results.*
9. INFORMS Workshop on Data Mining and Decision Analytics, Anaheim, CA (October, 2021). *Discovering group structure in longitudinal data.*
8. INFORMS Annual Meeting, Seattle, WA (October, 2019). *Coefficient tree regression for discovering structure in generalized linear models.*
7. INFORMS Annual Meeting, Seattle, WA (October, 2019). *Discovering structure in longitudinal data via coefficient tree regression.*
6. INFORMS Annual Meeting, Phoenix, AZ (November, 2018). *Coefficient tree regression for discovering hidden structure.*
5. The 12th ACM Conference on Recommender Systems, Vancouver, Canada (October, 2018). *Multi-stakeholder recommendation with provider constraints.*
4. The Midwest Machine Learning Symposium, Chicago, IL (June, 2018). *Coefficient tree regression for discovering hidden structure.*
3. The 11th ACM Conference on Recommender Systems, Como, Italy (August, 2017). *Improving similarity measures using ontological data.*
2. The 34th National Conference for Operations Research and Industrial Engineering, Bursa, Turkey (June, 2014). *Event and clock-based representations in mathematical optimization.*
1. The 26th European Conference on Operational Research, Rome, Italy (July, 2013). *Simulated annealing algorithm with variable cluster number and comparison with k-means algorithm.*

F. Grants Received

1. External Grants:

1. Bayesian Analysis of Nuclear Dynamics (BAND), **National Science Foundation**, Senior Personnel (w/ 11 PI, co-PI and Senior Personnel), \$3,716,619 (Miami Share \$169,021), 2022-2025.

2. Internal Grants:

1. Examining the Privacy Implications from the Use of Wearables, PI (w/ 3 co-PIs), **Miami University Advanced Research Teams (ART) Grant program**, \$59,339, 2023-2024.

G. External Grants Under Review

1. Advancing Theory for Nuclear Double-Beta Decay (@NBD), **National Science Foundation**, Senior Personnel (w/ 16 PI, co-PI and Senior Personnel), Budget: \$2,000,000 (Miami Share \$57,800), 2024-2029. **Status:** Under review.

H. Open-Source Software

1. PUQ, v0.1.0 released July 2023 read the docs, project page
Python package for parallel implementation of novel uncertainty quantification methods.
 2. *surmise*, v0.1.1 released July 2021 read the docs, project page
Python package designed to provide a surrogate model interface for calibration, uncertainty quantification, and sensitivity analysis.
 3. CTR, released September 2020 vignette, project page
R package for the application of coefficient tree regression (CTR).
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IV. Service

1. **Advisory board member**, Information and Statistics in Nuclear Experiment and Theory (ISNET), 2023-Present.
2. **Session chair**, “Efficient Statistical Methods for Uncertainty Quantification”, INFORMS Annual Meeting, Indianapolis, IN. October, 2022.
3. **Workshop organizer**, “Statistical Methods for Uncertainty Quantification and Parallel Computing”, SIAM Conference on Parallel Processing for Scientific Computing, Seattle, WA. February, 2022.
4. **Session chair**, “Data-driven Modeling in Uncertainty Quantification”, INFORMS Annual Meeting, Anaheim, CA. October, 2021.
5. **Session chair**, “Interpretable Predictive Models”, INFORMS Annual Meeting, Seattle, WA. October, 2019.
6. **Session chair**, “Intriguing Tweaks in Data Science I”, INFORMS Annual Meeting, Phoenix, AZ. November, 2018.
7. **Reviewer for journals including:**
 - *Technometrics*
 - *SIAM/ASA Journal on Uncertainty Quantification*
 - *International Journal for Uncertainty Quantification*
 - *Journal of Quality Technology*
 - *Machine Learning*
 - *INFORMS Journal on Computing*
 - *Information Systems*
 - *IIE Transactions*