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
Assistant Professor   **August, 2022 - present**

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

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

Northwestern University, Industrial Engineering and Management Sciences, Evanston, IL
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

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III.   Research

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

11. **Özge Sürer**. Batch sequential experimental design for calibration of stochastic simulation models. *Technometrics*, 2025. (link)

10. **Özge Sürer**. Simulation experiment design for calibration via active learning. *Journal of Quality Technology*, 57(1), 16–34, 2024. (link) [*Invited to JQT Invited Session at QPRC 2025*]

9. Sara Shashaani, **Özge Sürer**, Matthew Plumlee, Seth Guikema. Building trees for probabilistic prediction via scoring rules. *Technometrics*, 66(4), 625–637, 2024. (link) [*Invited to Technometrics Invited Session at FTC 2024*]

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*, 66(2), 157–171, 2024. (Published Online: 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*, 18, 911–951, 2024. (Published Online: 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*, 113(7), 4723–4759, 2024. (Published Online: 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 Öztayşi. Designing sustainable energy regions using genetic algorithms and location-allocation approach. *Energy*, 161–172, 2016. (link)

B. Peer Reviewed Conference Proceedings

5. **Özge Sürer**, Xi Chen, Sara Shashaani. A dynamic calibration framework for digital twins using active learning and conformal prediction. *Proceedings of the Winter Simulation Conference*, 2025.

4. **Özge Sürer**, Stefan M. Wild. An active learning performance model for parallel Bayesian calibration of expensive simulations. *NeurIPS 2024 Workshop on Bayesian Decision-making and Uncertainty*, 2024. (link)

3. **Özge Sürer**, Matthew Plumlee. Calibration using emulation of filtered simulation results. *Proceedings of the 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 Öztayşi, **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

25. The Joint Statistical Meetings (JSM), Nashville, TN (August, 2025). *Batch sequential experimental design for calibration of stochastic simulation models.*

24. The Quality and Productivity Research Conference (QPRC), Seattle, WA (June, 2025). *Simulation experiment design for calibration via active learning.*

23. The Annual ASA/IMS Spring Research Conference (SRC), New York, NY (June, 2025). *Batch sequential experimental design for calibration of stochastic simulation models.*

22. INFORMS Annual Meeting, Seattle, WA (October, 2024). *Simulation experiment design for calibration via active learning.*

21. Fall Technical Conference (FTC), Nashville, TN (October, 2024). *Simulation experiment design for calibration via active learning.*

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). *Multistakeholder 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. 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.

2. 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), 2022-2026.

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.   Open-Source Software

1. `BAND Framework`, v0.4.0 released October 2024, [coauthor]   website, project page
Set of publicly available software tools—a Cyberinfrastructure Framework—designed to facilitate principled uncertainty quantification (UQ) with multiple physics models.

2. `PUQ`, v0.1.0 released July 2023, [maintainer/coauthor]   read the docs, project page
Python package for parallel implementation of novel uncertainty quantification methods.

3. `surmise`, v0.1.1 released July 2021, [coauthor]   read the docs, project page
Python package designed to provide a surrogate model interface for calibration, uncertainty quantification, and sensitivity analysis.

4. `CTR`, released September 2020 , [maintainer/coauthor]   vignette, project page
R package for the application of coefficient tree regression (CTR).

IV.   Service

1. **Guest editor**, IISE Transactions Special Issue on Data Science for Computational Modeling (DSCM): Design, Uncertainty Quantification, and Optimization, 2025-2026.
2. **Advisory board member**, Information and Statistics in Nuclear Experiment and Theory (ISNET), 2023-Present.
3. **Search committee member for the postdoctoral research fellow**, @NBD Collaboration, January 2025.
4. **Mentor for the ASA Quality & Productivity (Q&P) Section mentoring program**, October 2024-December 2024.
5. **Session organizer & chair**
   - "Modern Perspectives on Statistical Learning for Uncertainty Quantification", JSM, Nashville, TN. August, 2025.
   - "Design and Computer Experiments", Quality and Productivity Research Conference, Seattle, WA. June, 2025.
   - "Computational/Statistical Methods for Uncertainty Quantification", INFORMS Annual Meeting, Seattle, WA. October, 2024.
   - "Efficient Statistical Methods for Uncertainty Quantification", INFORMS Annual Meeting, Indianapolis, IN. October, 2022.
   - "Data-driven Modeling in Uncertainty Quantification", INFORMS Annual Meeting, Anaheim, CA. October, 2021.
   - "Interpretable Predictive Models", INFORMS Annual Meeting, Seattle, WA. October, 2019.
6. **Workshop organizer & chair**
   - "Statistical Methods for Uncertainty Quantification and Parallel Computing", SIAM Conference on Parallel Processing for Scientific Computing, Seattle, WA. February, 2022.
7. **Session chair**
   - "Intriguing Tweaks in Data Science I", INFORMS Annual Meeting, Phoenix, AZ. November, 2018.
8. **Reviewer for journals including:**
   - *The Annals of Applied Statistics* $\times 1$
   - *INFORMS Journal on Data Science* $\times 2$
   - *Technometrics* $\times 2$
   - *IISE Transactions* $\times 3$
   - *Journal of Quality Technology* $\times 4$
   - *npj Digital Medicine* $\times 2$
   - *SIAM/ASA Journal on Uncertainty Quantification* $\times 1$
   - *Mathematics* $\times 1$
   - *International Journal for Uncertainty Quantification* $\times 2$
   - *INFORMS Journal on Computing* $\times 2$
   - *Machine Learning* $\times 1$
   - *Scientific Reports* $\times 1$
   - *Information Systems* $\times 1$
9. **Professional development:**
   - INFORMS Junior Faculty Network Session, 2024: selected to present my research as a representative of the Quality, Statistics and Reliability Section
   - INFORMS New Faculty Colloquia, 2023: attended the day-long event including tips on what not to do, difference between business and engineering schools, opportunities to interact with panelists.
10. **Community engagement:**
    - I have delivered tutorials and presentations to make statistical software tools more accessible to

the broader community:

- Presented on `PUQ` at the BAND-Nuclear Data Workshop in December 2024.
- Delivered the virtual presentation on the `BAND Framework` at the STAR Collaboration's "Spring Juniors Day" in March 2024.
- Led tutorials (see an example) and interactive presentations (see an example Google Colab doc) on `surmise` during the annual BAND Camps in December 2021 and May 2023.

Through these initiatives, I aim to enhance knowledge dissemination, foster community engagement, and promote the practical application of statistical tools in diverse research domains.