Talayeh Razzaghi

About

The central theme of my research group is the development of data-driven analytical, machine learning (ML), and artificial intelligence-based models with applications in healthcare, cyber-physical systems, and smart manufacturing. I am particularly interested in addressing prevalent issues in real-world datasets including high-dimensional sets of features, class imbalance, missing values, and outliers, among others. Together with my students, we aim to (1) develop specially tailored, scalable, and fast supervised learning techniques that are robust under imperfect and massive data, and (2) showcase, through extensive computational experiments, the benefits of our developed techniques when applied to challenging decision-making problems in healthcare, cyber-physical systems, and manufacturing. My team leverages ML to solve problems relating to personalized predictive modeling in medical diagnosis, and patient-centered outcomes prediction and analysis. Currently, my work focuses on health disparities, particularly in cancer and in health and disease outcomes in women.

Research Domains

- Machine learning with imperfect data
- Health disparities
- Disease risk stratification and outcome prediction
- AI-based community health monitoring and control
- Predictive analytics with applications in cyber-physical systems and manufacturing

ISE Impact Domains

- [Cyber-Physical-Social Systems](#)

- [Health and Medical Systems](#)

Experience and Distinctions

- INFORMS Senior Member, Dec 2024 - present
- NSF CAREER Awardee, 2024, Feb 2024
- University of Oklahoma's Vice President for Research and Partnerships (VPRP) Annual Award for Excellence in Research Grants, 2022, 2023
- Board of Directors, IISE Operations Research, 2021 – 2023
- Track Co-Chair, IISE Energy Systems Track, 2021 – present
- Cluster Chair (2020-2021) and Co-Chair (2021-2022), Energy, Natural Resources, and the Environment, INFORMS
- Reviewer, IISE Energy Systems Track Best Paper Award, 2022
- Reviewer and Committee Member, IISE Pritsker Award, 2020
- Reviewer, IISE-QCRE Student Paper Competition, 2020
- Associate Editor, Energy Systems (Springer), 2019 – present
- Program Committee Member and Reviewer, 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, 2017
- Postdoctoral Research Fellow, School of Computing, Clemson University, 2014 – 2016