Soraya Ezazipour

Stillwater, Ok 74075
405762677 sezazip@okstate.edu linkedin.com/in/soraya-ezazipour-6630b732

Education

•Ph.D. in Industrial Engineering & Management *2025 Expected*
Oklahoma State University GPA: 4

•Ph.D. in Applied Mathematics *2019*
Iran University of Science and Technology, Iran GPA: 3.8

•Master of Science in Applied Mathematics *2009*
Tarbiat Modares University, Iran GPA: 3.6

•Bachelor of Science in Applied Mathematics *2005*
Yazd University, Iran GPA: 3.2

Experience

•Graduate Research Assistant *August 2021 – Present*
Oklahoma State University Stillwater, OK
– Working network design problems, with a primary focus on redistricting problems
– Implementing heuristic and exact combinatorial algorithms to address complex challenges in redistricting.
– Conducting extensive numerical experiments using Python and Gurobi on large-scale network datasets.

•Graduate Research Assistant *September 2015 – November 2019*
Iran University of Science and Technology Iran
– Designed innovative algorithms using artificial neural networks to address bilevel optimization, MPEC, etc.
– Conducted extensive numerical experiments using C++ and Matlab.

•Instructor *October 2023 – Present*
Oklahoma State University Stillwater, OK
– Teaching operations research to undergrad students

•Lecturer *August 2020 – August 2021*
Kharazmi University of Applied Sciences Iran
– Teaching applied database with SQL, Discrete mathematics, Engineering prob and stat.

•Testing and Evaluation Coordinator *June 2010 – July 2014*
Ziamath Institute Iran
– Exam planning and scheduling
– Design and develop effective and valid test materials.
– Analyze test results and performance data to identify trends
– Identify areas for improvement in the testing and evaluation processes.

Projects

• Tradeoffs between Compactness and Population Balance in Political Redistricting
Utilizing the $\epsilon-$constraint method, to address a bi-objective optimization problem

• Design of a Conveyorized Production Line
Designing an efficient assembly line with eight workstations and a power-and-free conveyor system using Simio and ExpertFit

•Robust Facility Location Optimization under Box Uncertainty in Customer Demand
Optimizing Uncapacitated Facility Location under Box Uncertainty

•The Worst-Case Effects of Differential Privacy
Investigate the impact of the Census Bureau's differential privacy technique on political redistricting, using integer programming

•Recurrent Neural Networks and Their Application in Solving MPEC
Designing models of neural networks for mathematical programming problems with equilibrium constraints (MPEC).

•Projection Neural Networks for Solving Pseudoconvex Optimization Problems
Designing models of the projection neural network that can tackle pseudoconvex optimization problems.

Technical Skills and Interests

Languages: C++, Python
Developer Tools: Gurobi, CPLEX, Matlab, SQL, Simio, ExpertFit, Latex, Ms Office.
Key Skills: Operations research, Optimization, Modeling, Simulation, Data analysis
Soft Skills: Teaching, Teamwork, Problem solving, and Leadership.
Coursework: Network optimization, Machine learning, Discrete system simulation, Probability theory, Integer programming, Robust optimization, Supply chain strategy

Positions of Responsibility

•**Session organizer,** 2022 INFORMS Annual Meeting *Indianapolis*

•**Session organizer,** 2023 INFORMS Annual Meeting *Phoenix*

•**Vice President,** 2023 Informs Student Chapter *Oklahoma State University*

•**Editorial board,** Frontiers in Applied Mathematics and Statistics

•**Reviewer,** International Journal of Modeling, Simulation, and Scientific Computing

Achievements

•**Alpha Pi Mu Honor Society,** Oklahoma State University *2023*

•**Doctoral Fellowship,** Iran university of science technology *2018*

•**First place of PhD national entrance exam in applied mathematics,** Iran *2013*

•**Second place of graduate level students,** Tarbiat Modares University, Iran *2009*

•**Third place of undergraduate level students,** Yazd University, Iran *2005*

Publications

- Belotti, Pietro, Austin Buchanan, and Soraya Ezazipour. "Political districting to optimize the Polsby-Popper compactness score." Submitted to Operations Research, 2023.
- Golbabai, Ahmad, and Soraya Ezazipour. "A projection-based recurrent neural network and its application in solving convex quadratic bilevel optimization problems." Neural Computing and Applications 32 (2020): 3887-3900.
- Golbabai, Ahmad, and Soraya Ezazipour. "A high-performance nonlinear dynamic scheme for the solution of equilibrium constrained optimization problems." Expert Systems with Applications 82 (2017): 291-300.
- Ezazipour, Soraya, and Ahmad Golbabai. "A globally convergent neurodynamics optimization model for mathematical programming with equilibrium constraints." Kybernetika 56.3 (2020): 383-409.