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| **Saviz Saei, Ph.D.**  [ss4646@msstate.edu](mailto:ss4646@msstate.edu) | (740) 818-8877 | [Linkedin](https://www.linkedin.com/in/saviz-saei-61141943/) | [Github](https://github.com/savizsaei)  U.S. Permanent Resident |

# Profile

5+ years of experience in **machine learning, statistical modeling, and optimization**. Proficient in Python, TensorFlow, and PyTorch, with extensive experience deploying ML models in cloud environments, particularly Azure. Proven ability to lead interdisciplinary teams and deliver impactful solutions.

# Skills

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| **Programming/ Tools:** Python, PySpark, SQL, RStudio, scikit-learn, LangChain, TensorFlow, PyTorch, Gurobi, JavaScript, React. |
| **Machine Learning Libraries**: Optimization in Transportation, Two-Stage Stochastic Programming with Risk-Neutral, Risk-Averse, and Hybrid Approaches, System Resiliency, GenAI Modeling, Supervised/Unsupervised Learning, Reinforcement Learning, Gradient-Based Optimization, Statistical Analysis, Time Series Analysis. |
| **Cloud Computing**: Azure, cloud deployment, APIs, Docker, Git, Power BI. ExperienceSocial Science Research Center | Starkville, MS | Apr 2025 – Present  * **Conducted statistical analyses—including A/B testing (t-tests and chi-square tests), non-parametric tests (e.g., Mann-Whitney U for eHEALS scores), and regression modeling—on customer care data using Python, R, and SPSS to examine health information-seeking behavior among older adults.** * **Designed AI RAG model, Vector Databases, and AI Agent systems with llama and openai to match users with appropriate services, including healthcare, housing, and legal aid.**  Archer Daniels Midland (ADM) | Machine Learning Engineer Apr 2024 – Feb 2025  * **Re-architected SAP-generated reports using Python and JavaScript; implemented containerized apps with Faiss (vector DB) and FastAPI, integrated with APIM and React, and deployed in Azure — reducing costs by 30% and improving efficiency.** * **Designed and deployed a GenAI Q&A system using Retrieval-Augmented Generation (RAG) with Python, Dash, and Azure; leveraged embedding-based cosine similarity to optimize retrieval and enhance accessibility.** * **Built an advanced HR recommendation system using embedded similarity search in Azure; reduced candidate screening time by 40%.**  Social Science Research Center | Research Scientist/Intern May 2023 – Aug 2023  * **Analyzed social media data for an NSF-funded research project; utilized Pandas, NumPy, and NLP techniques (NLTK, NRCLex, regex) to assess mental health trends during critical events such as COVID-19.** * **Developed interactive data visualizations using JavaScript and Matplotlib; transformed complex research findings into clear, insightful visuals to enhance data interpretation and communication.**  Mississippi State University | Research Assistant Jun 2021 – Apr 2024  * **Conducted an in-depth study on infrastructure system resilience; analyzed disaster resilience across engineering, ecology, and social sciences to identify key vulnerabilities and improve mitigation strategies.** * **Developed strategic board game AI using machine learning and neural networks; integrated A search and deep reinforcement learning to enhance decision-making and optimize gameplay performance.** * **Independently researched deep reinforcement learning techniques; explored policy gradients, Q-learning, and actor-critic methods to advance AI decision-making and optimize learning efficiency.**  Ohio University | Research Assistant and Teaching Assistant Jan 2021 – May 2021  * **Conducted regression analysis and data preprocessing using Python and SQL in collaboration with IBM, optimizing data quality and modeling to enhance predictive insights into human trafficking patterns.**  Golrang System Company- IT | Project Mng & Data Scientist Jul 2017 – Nov 2020  * **Managed multiple projects using Azure DevOps; task management, and team collaboration to improve project efficiency and delivery timelines by 25%.** * **Optimized sales process performance using SQL, Power BI, and Azure to increase sales by 15%.** |

# Education

#### Ph.D. in Industrial and Systems Engineering

Mississippi State University, Starkville, MS, United States Jul 2021 – Dec 2024

**Dissertation:** On the Nexus of Topological Measures and Their Ability to Elucidate Network Vulnerability Patterns.

**Advisor:** Dr. Nazanin Tajik

**Relevant courses**: Optimization, Machine Learning with PySpark, Deep Learning, Advanced Data Analysis, Time Series.

#### Minor in Computer Science

**Advisor:** Dr. Max Young

**Relevant courses:** Machine Learning, Artificial intelligence with Python, Introduction to Algorithms, Data Science with R, Data Structures with C++.

#### M.S. in Industrial Engineering

Science & Research Branch Azad University, Tehran, Iran Sep 2010 – Jan 2013

**Dissertation:** A New Mathematical Model for a Multi-Depot Vehicle Routing Problem in a Natural Disaster

Situation and Its Solution Using a Particle Swarm Optimization Algorithm.

**Advisor:** Dr. Reza Tavakoli-Moghadam

**Relevant courses:** Simulation of freight transport, System analysis of air pollution.

#### B.S. in Statistics

Imam Khomeini International University, Qazvin, Iran Sep 2004 – Oct 2008

# Publications

* + Saei, S., Ghimire, S., & Anreddy, S. (2025). “Beyond Accuracy: Evaluating LLMs for Validating Community Service Provider.” SEDE-2025 Springer Nature.
  + Saviz, S., & Anreddy, S. (2025). “A Comparative Analysis of RAG and Non-RAG Models to Improve Access to Service Provider Information for Older Adults in Mississippi”, SEDE-2025 Springer Nature.
  + Saei, S. (2025). Scenario-Based Optimization of Network Resilience: Integrating Vulnerability Assessments and Traffic Flow. [arXiv:2503.23251](https://arxiv.org/abs/2503.23251).
  + Saei, S., & Tajik, N. (2024). “Risk-Neutral, Risk-Averse, and Hybrid Approaches for Scenario-Based Two-Stage Stochastic Programming in Disrupted Transportation Networks.” [Presented at the 2024 Annual INFORMS Conference page 1151/1276](https://3449182.fs1.hubspotusercontent-na1.net/hubfs/3449182/Program%20Book%2010-18.pdf?__hstc=194041586.0ac9962d09777c7b2798298312671a43.1739401699973.1739401699973.1739401699973.1&__hssc=194041586.1.1739401699973&__hsfp=3988306244&hsCtaTracking=5835f4c8-59b8-4bca-8530-78711a945d5c%7C3f0fe9dd-45bd-40fb-840b-4f4318a16140).
  + Saei, S., & Tajik, N. (2022). “Time-Dependent Restoration Routing Problem: An Efficient Initial Solution.” [Findings](https://findingspress.org/article/37396-time-dependent-restoration-routing-problem-an-efficient-initial-solution).
  + Saei, S., Mohammadi, M., Fekriseri, M., & Jenab K. (2019). “[A computational method for estimating Burr XII parameters with complete and multiple censored data](https://arxiv.org/abs/1901.09299)”, arXiv:1901.09299
  + Saei, S., Tavakoli-Moghaddam, R., & Alinaghian, M. (2013). “A New Mathematical Model for a Multi-Depot Vehicle Routing Problem in a Natural Disaster Situation and Its Solution Using a Particle Swarm Optimization Algorithm.” Journal of Transportation Research, 12(142), 37-51.
  + Saei, S., Najafi, E. (2013). “[A new expansion on multi-stage DEA methodology in supply chain management](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=vohVhbkAAAAJ&citation_for_view=vohVhbkAAAAJ:u5HHmVD_uO8C)”, [Industrial Management (Sanandaj) ٫Number 25.](https://ensani.ir/fa/article/journal-number/36486/%D9%85%D8%AF%DB%8C%D8%B1%DB%8C%D8%AA-%D8%B5%D9%86%D8%B9%D8%AA%DB%8C-%D8%A2%D8%B2%D8%A7%D8%AF-%D8%B3%D9%86%D9%86%D8%AF%D8%AC-%D8%B3%D8%A7%D9%84-%D9%87%D8%B4%D8%AA%D9%85-%D9%BE%D8%A7%DB%8C%DB%8C%D8%B2-1392-%D8%B4%D9%85%D8%A7%D8%B1%D9%87-25)

#### **Machine Learning:**

* Saei, S., Wang, Y., Marufuzzaman, M., Tajik, N., & Wang, H. (2022). “Prediction of Community Transmission Levels of COVID-19 Using Machine Learning Algorithms Based on the CDC Social Vulnerability Index.” [Biomedical Sciences Instrumentation, 58(3), 9. International Academic Express (IAE).](https://iaexpress.ca/wp-content/uploads/2023/01/8_Biomed-Sci-Instrum-Vol58_3_July_2022_Saviz_pg168.pdf)

# Certificates

* **Python 3 Programming Specialization – University of Michigan (Coursera)**
* **Azure AI Fundamentals (AI-900) – Microsoft**
* **Supervised Machine Learning: Regression and Classification – Stanford University (Coursera)**
* **Neural Networks and Deep Learning – DeepLearning.AI (Coursera)**
* **SQL Server Design and Implementation – Fad.ir**