

Saviz Saei

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PROFESSIONAL SUMMARY

AI/ML and optimization professional with 7+ years building data products and decision-support systems. Expertise in supervised/unsupervised learning, reinforcement learning, stochastic optimization, and network resilience. Proven track record shipping production solutions on Azure (APIM, containers, vector search) and leading cross-functional delivery. Designed and deployed RAG-based agents, recommendation systems, and analytics pipelines that cut costs and accelerate decisions. Comfortable across the Python, TensorFlow/PyTorch, SQL, JS/React, and rigorous statistical work (A/B tests, non-parametric methods, regression) to drive measurable impact.

WORK EXPERIENCE

Social Science Research Center - Starkville MS

Apr 2025-Present

Lead Research Scientist (AI/ML)

- **Student Risk Assessment System:** Full-stack app for conducting/tracking assessments, managing student profiles, and generating early-intervention reports; includes a role-based RAG chatbot (Node.js).
- Productionized microservices (FastAPI/Node.js) behind API gateways with role-based access control and secret management; implemented CI/CD (GitHub Actions)
- Architected distributed AI/ML services for assessment, RAG, and agent workflows; separated inference/training/orchestration/storage concerns to improve reliability and reuse across projects.
- Productionized microservices (FastAPI/Node.js) behind API gateways with role-based access control and secret management; implemented CI/CD (GitHub Actions)
- Built retrieval pipelines with vector DBs (FAISS) and LLM (input/output filtering, prompt telemetry) to meet explainability and risk requirements.
- **Health Behavior Analytics:** Designed and ran statistical experiments on customer-care data to identify access/engagement patterns among older adults; applied t-tests/ χ^2 , Mann-Whitney U (eHEALS), and multivariate regression in Python/R/SPSS to quantify information-seeking behavior and generate targeting rules for an AI chatbot platform.
- **RAG & Agent Systems:** Designed vector-database-backed RAG and AI agents (Llama, OpenAI) to match users to services (healthcare, housing, legal aid); built retrieval and orchestration pipelines for accurate, explainable recommendations.

Archer Daniels Midland (ADM) - Erlanger KY

Apr 2024-Feb 2025

Machine Learning Engineer - AI Team

- Platformized GenAI & classical ML on Azure: containerized FastAPI services with vector search, fronted by APIM, and instrumented for latency/throughput/error-rate drove ~30% cost reduction and higher throughput.
- Designed multi-service RAG architecture with asynchronous pipelines, job queues, and caching (embedding & retrieval)
- Re-architecture LLM SAP Report and deploy: Rebuilt SAP-generated reporting with Python/JavaScript; delivered containerized services using FastAPI and Faiss (vector DB), integrated with APIM and React, and deployed to Azure cloud, reduced reporting cost ~30% and increased throughput.
- Generative AI Q&A (RAG) Compass Report: Delivered an Azure-hosted RAG system (Python, Dash) leveraging embedding-based cosine similarity to improve findability and self-service analytics.
- Generative AI Q&A HR Recommendation System: Built an embedded similarity search-based candidate matching engine on Azure, cut screening time ~40%.
- Led cost optimization playbooks (right-sizing GPU/CPU, spot instances, autoscaling, RDMA-enabled SKUs where available) and batch vs. online routing lowered training time ~20% and GPU idle by 30%.

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Social Science Research Center - Starkville MS
Research Scientist / Intern

May 2023-Aug 2023

- **NLP for Public Health:** Analyzed social media to assess mental-health trends during critical events (e.g., COVID-19) using Pandas, NumPy, and NLP (NLTK, NRCLex, regex).
- **Data Storytelling:** Built interactive visualizations (JavaScript, Matplotlib) to translate complex findings into clear insights for stakeholders.

Mississippi State University - Starkville, MS
Research Assistant & Teaching Assistant

May 2021-Dec 2024

- **Infrastructure Resilience:** Conducted research in-depth on disaster resilience across engineering, ecology, and social sciences to detect vulnerabilities and guide mitigation strategies.
- **OR (Gurobi):** Designed Scenario-based network-resilience optimization modeling, considering vulnerability assessments in traffic flow.
- **Scenario Generation:** Ranked nodes via different network metrics to build disruption scenarios for the optimization model.
- Trained deep RL agents on GPU for game/search tasks; captured experiment metadata, seed control, and artifact logging for reproducibility.
- **Game AI:** Developed strategic board-game AI with machine learning and neural networks; integrated A* search and deep reinforcement learning to improve decision quality.
- **Deep RL Methods:** Independent research into policy gradients, Q-learning, and actor-critic methods to advance sequential decision-making.

Ohio University - Athens, OH
Research Assistant & Teaching Assistant

Jan 2021-May 2021

- **Human-Trafficking Analytics (with IBM):** Led and executed regression modeling and data preprocessing in Python/SQL to strengthen predictive insights for risk identification.
- **TA Business Analytics:** Led SQL, Access, and Excel lab sessions.

Golrang System Company (IT)
Project Manager & Data Scientist

Jul 2017-Nov 2020

- **Delivery & Collaboration (Azure DevOps):** Managed portfolios across data analytics, sales, and web development; streamlined task management and team collaboration, improved delivery timelines ~25%.
- **Agile Execution:** Applied agile methodologies to optimize workflows, strengthen cross-functional alignment, and accelerate releases.
- **Data-Driven Solutions:** Developed and deployed analytics to enhance decision-making, customer engagement, and boost sales performance (~15%).
- **Stakeholder Partnership:** Translated business requirements into technical roadmaps with senior leadership; ensured measurable value and adoption.
- **Key Contribution:** Enabled large-scale IT and data initiatives that increased operational efficiency and advanced digital transformation across Golrang Industrial Group.

Hamrahe Aval (MCI)
Project Manager & Sr. Data Analyst

Jul 2014 – Jul 2017

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- **Nationwide Network Launch:** Supported rollout of mobile broadband (mBB) and 3G services; coordinated milestones across Marketing, Sales, Customer Service, and Network Roll-out.
- **KPI Design & Reporting:** Defined KPIs and communicated progress to the Chief Marketing Officer (CMO) and Customer Care; produced weekly executive updates highlighting risks and mitigations.
- **PMO & Planning:** Built project documentation, schedules, and resource plans for CMO initiatives.
- **Infrastructure Customer Experience Analytics:** Coordinated BTS tower location allocation, customer-care improvements, customer-journey surveys, and loyalty analysis, applied insights to optimize infrastructure and enhance retention.
- **Consulting Liaison:** Acted as primary interface with Arthur D. Little, aligning recommendations with business objectives.
- **Cross-Functional Alignment:** Maintained continuous alignment of CMO deliverables with parallel technical and business workstreams.
- **Key Contribution:** Played a pivotal role in the successful nationwide 3G (and select 4G) rollout through tight coordination between technical and commercial teams.

EDUCATION

- **PhD - Industrial and System Engineering**
Mississippi State University, Starkville, MS (Jan 2021 - Dec 2024)
Dissertation: On the Nexus of Topological Measures and Their Ability to Elucidate Network Vulnerability Patterns.
Minor - Computer Science
Relevant courses: ML with Pyspark, AI with Python, Algorithms, Data Science with R, Data Structures with C++
- **Master of Science - Industrial Engineering**
Azad University, Science & Research Branch (August 2010 - Jan 2013)
Thesis: Multi-Depot Vehicle Routing Problem in Natural Disasters; PSO-based solution.
- **Bachelor of Science - Statistics**
Imam Khomeini International University (Sep 2004 - Oct 2008)

SKILLS

Python, Gurobi, Operation Research, Scikit-Learn, TensorFlow, PyTorch, NumPy, Pandas, SQL, R, Dash

CERTIFICATIONS

- Azure AI Fundamentals (AI-900) - Microsoft | Dec 2024
- Python 3 Programming Specialization - University of Michigan (Coursera) | Jan 2023
- Supervised Machine Learning: Regression & Classification - Stanford University (Coursera) | Jan 2023
- Neural Networks and Deep Learning - DeepLearning.AI (Coursera) | Dec 2022
- Network Data Science with NetworkX and Python | Aug 2021