Forough Shirin Abkenar

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LinkedIn Profile | Google Scholar | Personal Webpage | GitHub | ORCID

Professional Summary

ML Engineer and Researcher with five years of experience building and deploying advanced machine learning solutions, with published work in deep learning, generative AI, and domain adaptation. Skilled in Python and PyTorch, with expertise across the full ML life-cycle, from data preparation and experimentation to deployment and inference optimization. Proven ability to translate cutting-edge research into real-world applications, with emerging hands-on experience in fine-tuning LLMs for decision-making workflows. Collaborative and adaptive, with strong communication skills and a passion for delivering innovative and high-impact AI solutions.

Education

- **Ph.D. in Electrical Engineering and Computer Science** *2018 – 2022*
  The University of Sydney — Recipient of the **Dean's Award for the Best Thesis**
- **Master of Science in Computer Science** *2012 – 2014*
  Sahand University of Technology — GPA: 4.0/4.0
- **Bachelor of Science in Computer Science** *2008 - 2012*
  Shahid Madani University of Azarbayjan — GPA: 4.0/4.0

Experience

ML Researcher, University of California – Davis, CA — February 2023 – February 2025

- Designed **deep learning models** for **failure prediction** and **anomaly detection**, improving predictive accuracy.
- Enhanced **model generalization** with **domain adaptation** (DANN, self-supervised) and improved efficiency via **knowledge distillation**.

ML Researcher, University of California – Irvine, CA — February 2022 – February 2023

- Collaborated with **Intel AI/ML teams** to develop **adaptive machine learning models** for time-variant datasets and real-time data processing, improving performance in **real-world AI applications**.
- Led **feature engineering efforts** and **statistical analysis** for large-scale datasets, optimizing data-driven insights.

Freelance ML Researcher and Lecturer, Davis, CA — February 2025 – Present

- Pattern recognition and text classification using few-shot prompting, prompt engineering, and **LLM fine-tuning**.

Selected Publications

F. Shirin Abkenar et al. (Full list, 20+ papers with 500+ citations and h-index: 10+, in Google Scholar)

- "Anomaly detection, undupervised/self-supervised learning, federated learning, domain adversarial neural networks, teacher-student model," *2025*.
- "Stress in pregnant women, covariate shift, realtime domain adaptive classification, supervised learning, SVM," *2023*.
- "Covariate shift, supervised learning, classification accuracy, false negative ratio," *2023*.
- "Anomaly detection, large language models (LLMs) fine-tuning, distilBert, GPT-2, PEFT, LoRA," *2025*.

Technical Skills

Programming & Frameworks: Python, C++, SQL, PyTorch, Scikit-learn.
Machine Learning & AI: Traditional (SVM, Random Forest, XGBoost), Deep Learning (CNNs, RNNs, LSTMs), Generative AI (GANs, VAEs, LLM), Federated Learning, Reinforcement Learning, Transfer Learning, Domain Adaptation.
Mathematical & Statistical Methods: Probabilistic Modeling, Convex Optimization, Bayesian Inference.
Data Processing & Engineering: Feature Engineering, Data Augmentation, Dimensionality Reduction.

Certifications and Achievements

- **Generative AI with LLMs Certification**, Amazon Web Services, 2025.
- **Dean's Award for the Best Thesis**, The University of Sydney, 2023.