# Mahdi Ahmadi

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## Education

- **Ph.D. in Computer Science,** *Arizona State University, GPA: 4.0* *Aug 2023 – Present*
- **M.Sc. in Electrical and Electronics Engineering,** *Isfahan University of Technology,* *Sep 2016 – Apr 2019*
- **B.Sc. in Electrical and Electronics Engineering,** *Isfahan University of Technology,* *Sep 2012 – Apr 2016*

## SelectedPublications

- **M. Ahmadi**, J. Leland, A. Chatterjee, Y. Choi, "Fair Image Generation from Pre-trained Models by Probabilistic Modeling," *SafeGenAI Workshop, Neural Information Processing Systems (NeurIPS)*, 2024.
- **M. Ahmadi**, A. Norouzi, N. Karimi, S. Samavi, A. Emami, "ReDMark: Framework for Residual Diffusion Watermarking by Deep Networks," *Expert Systems with Applications*, 2020.
- O. Rezaei, **M. Ahmadi**, MM. Naghsh, et al., "A Learning-Based Strategy to Design Binary Sequences with Good Correlation Properties: SISO and MIMO Radar Systems," *IEEE Transactions on Aerospace and Electronic Systems*, 2023.
- **M Ahmadi**, N Karimi, S Samavi, "Context-aware saliency detection for image retargeting using convolutional neural networks," *Multimedia Tools and Applications*, 2021.
- **M Ahmadi**, A Emami, M Hajabdollahi, et al., "Lossless Compression of Angiogram Foreground with Visual Quality Preservation of Background," *Engineering in Medicine and Biology Society (EMBC)*, 2018.

## Technical Skills

- **Programming & Tools:** Python, C, C++, SQL, Linux, Docker, Git, MATLAB, OpenCV, Scikit-Learn, Pandas, TensorFlow, PyTorch, PySpark, AirFlow, Verilog, Grafana, Kubernetes
- **Specialized Expertise:** Deep Learning, Machine Learning, Computer Vision, Natural Language Processing, Data Mining, Image Processing, Generative AI, FPGA, Teaching, Signal Processing, Optimization

## Professional Experience

**Graduate Research Associate,** *Arizona State University* | Aug *2023 – Present*

- Explored probabilistic modeling for generating fair images, resulting in publication at a NeurIPS 2024 workshop
- Leveraged Pytorch and TensorFlow for research in computer vision and NLP applications
- Exploring the use of tractable probabilistic models in individual treatment effect (ITE) for medical data from Mayo Clinic

Partnering with the Arizona Department of Emergency and Military Affairs (DEMA) to enhance predictive models for natural disaster forecasting.

**Graduate Teaching Assistant,** *Arizona State University* | Aug *2024 – May 2025*

Teaching assistant for CSE571 (Artificial Intelligence) and CSE471 (Intro to AI)

**Data Scientist,** *Divar | 2019 – 2023*

- **Computer Vision and NLP Applications:**
  - Designed, trained, and deployed an **automatic advertisement acceptance system** across seven verticals, achieving 25% automation and saving equivalent to 50 operations employees
  - Developed a **fraud detection model** for the chat platform, improving precision by 8%
  - Implemented a **harassment detection system** in the chat platform, increasing precision from 0.26 to 0.44 through advanced text and numerical feature engineering
  - Built an **anomaly detection model** leveraging text embeddings and time-series data to identify abnormalities in user advertisements, resulting in important business decisions
- **Recommendation Systems:**
  - Designed and A/B-tested collaborative filtering and content-based filtering recommendation models, increasing engagement rates for job seekers by 11%
- **Leadership & Collaboration:**
  - Established weekly knowledge-sharing sessions and owned data science review meetings
  - Interviewed data science candidates as part of the technical interview team

## Honors & Awards

- **2023**: Fulton Fellowship Award, Arizona State University
- **2022**: Voluntary Paper Reviewer, *IEEE Transactions on Multimedia* and *IEEE Transactions on Aerospace and Electronic Systems*
- **2018**: Second Place among M.Sc. Electrical Engineering Students, Isfahan University of Technology