# Amirmohammad Mohammadi

College Station, Texas ● (979) 436-5736 ● amir.m@tamu.edu ● Scholar ● LinkedIn ● Website


## RESEARCH INTERESTS

Fundamental and applied artificial intelligence; Deep learning; Multimodal AI; Data science; Circuit design

## RESEARCH EXPERIENCE

Texas A&M University, College Station, Texas — September 2022 – Present

***Research Assistant***

- **Reduced** Transformer-based foundation models fine-tuning parameters by **40%** compared to conventional adapters for by proposing a distribution-aware parameter-efficient algorithm.
- **Raised** classification accuracy of a convolutional-based deep learning model **7 pp** by constructing a time-frequency feature engineering.
- **Cut** required ground truth by a factor of **15** in physiological signals by using physics-informed neural networks and integrating domain knowledge.
- **Published** 3 papers as first author and 3 papers as second author. (AI/ML; Python; PyTorch; NumPy)

Sharif University of Technology, Tehran, Iran — July 2019 – February 2021

***Student Researcher***

- **Designed** an ECG + EDA sensor (BLE SoC) that has a higher battery life **(3×)** compared to alternatives and delivers **94%** mental stress detection accuracy across 18 participants (HW-SW co-design).
- **Published** a paper as first author. (electrical circuit design and analysis; embedded systems; MATLAB; C)

## EDUCATION

**Texas A&M University,** College Station, Texas — December 2026 (anticipated)
Doctor of Philosophy in Computer Engineering
(received full-funded position for Ph.D. studies through NIH, MIT LL, and Texas A&M ECEN)

**Sharif University of Technology,** Tehran, Iran — February 2021
Master of Science in Electrical Engineering
(received full-funded tuition through National University Entrance Exam for M.Sc. studies)

**University of Tabriz,** Tabriz, Iran — September 2018
Bachelor of Science in Electrical Engineering,
(received full-funded tuition through National University Entrance Exam for B.Sc. studies)

## PUBLICATIONS

- Orvati Nia, F., **Mohammadi, A.**, Al Kharsa, S., Naikare, P., Hampel-Aria, Z., & Peeples, J., Neighborhood Feature Pooling for Remote Sensing Image Classification. *PREPRINT.* [link]
- **Mohammadi, A**., Carreiro, D., Van Dine, A., & Peeples, J., Histogram-based Parameter-efficient Tuning for Passive Sonar Classification. *PREPRINT*. [link]
- Ritu, J., **Mohammadi, A**., Carreiro, D., Van Dine, A., & Peeples, J., Structural and Statistical Audio Texture Knowledge Distillation (SSATKD) for Passive Sonar Classification. *PREPRINT*. [link]
- **Mohammadi, A**., Masabarakiza, I., Barnes, E., Carreiro, D., Van Dine, A., & Peeples, J. (2025). Investigation of Time-Frequency Feature Combinations with Histogram Layer Time Delay Neural Networks. *IEEE OCEANS*. [link]

- **Mohammadi, A**., Kelhe, T., Carreiro, D., Van Dine, A., & Peeples, J. (2025). Cross-Domain Knowledge Transfer for Underwater Acoustic Classification Using Pre-trained Models. *IEEE OCEANS.* [link]
- Sel, K., **Mohammadi, A.**, Pettigrew, R. I., & Jafari, R. (2023). Physics-informed neural networks for modeling physiological time series for cuffless blood pressure estimation. *Nature NPJ Digital Medicine*, 6(1), 110. [link]
- **Mohammadi, A.**, Fakharzadeh, M., & Baraeinejad, B. (2022). An integrated human stress detection sensor using supervised algorithms. *IEEE Sensors Journal*, 22(8), 8216-8223. [link]

## LEADERSHIP & SERVICE

- Provided peer-review for IEEE ICASSP and Expert Systems with Application.
- Provided mentorship for students for development of AI projects.

## NOTABLE CIRCUIT DESIGN COURSE PROJECT

- Design and simulation of an operational amplifier in 180 nm CMOS TSMC technology. Achieved excellent specifications in the process corners (SS, FF, FS, SF, TT) in the temperature range of -40 to 120 degree and supply voltages of 1.65 to 1.80 volt. Worst case: gain > 74 dB, unity-gain frequency > 300 MHz, phase margin > 46, total current < 9 mA (HSPICE BSIM3). Received highest project grade in the class in CMOS Circuit Design in Fall 2019.