Amirmohammad Mohammadi

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

PROFILE SUMMARY

4½ years of grant-funded ML/AI applied research in digital health, sensing, remote monitoring, and wearables; developed customized architectures and training objectives; first author of four papers.

RESEARCH EXPERIENCE

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

Research Assistant

- **Reduced** trainable parameters by **40%** compared to adapters in passive sonar parameter-efficient transfer learning (Transformers) by proposing a histogram-based algorithm, while maintaining accuracy.
- **Raised** DeepShip (audio) classification accuracy **7 pp** by a time-frequency feature engineering.
- **Cut** required ground truth by a factor of **15** in Bio-Z signals with physics-informed neural networks.
- **Published** 3 papers as first author and 2 papers as second author.

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

Student Researcher

- **Designed** a low-power ECG + EDA wearable (BLE SoC) that has a higher battery life **(3.5×)** compared to alternatives and delivers **94%** mental stress detection accuracy across 18 participants.
- **Published** a paper as first author.

SKILLS

Python, PyTorch (+Lightning), Jupyter Notebook, Spyder, GitHub, LaTeX

EDUCATION

Texas A&M University, College Station, Texas — Fall 2026 / Spring 2027 (anticipated)
Doctor of Philosophy in Computer Engineering

Sharif University of Technology, Tehran, Iran — February 2021
Master of Science in Electrical Engineering

University of Tabriz, Tabriz, Iran — September 2018
Bachelor of Science in Electrical Engineering

PUBLICATIONS

- **Mohammadi, A**., Carreiro, D., Van Dine, A., & Peeples, J. (2025). Histogram-based Parameter-efficient Tuning for Passive Sonar Classification. *PREPRINT*. [link]
- Ritu, J., **Mohammadi, A**., Carreiro, D., Van Dine, A., & Peeples, J. (2025). 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]

POSTER WORKS

- **Mohammadi, A.**, Sel, K., Pettigrew, R. I., & Jafari, R. (2023). Physics-Informed Neural Networks for Modeling Cardiovascular Dynamics. Poster presented at the *2023 AI in Health Conference*, Houston, TX.

LEADERSHIP & SERVICE

Peer-Review and Conference Support:

- Served as a Helper/Area Chair for Applied Signal Processing Systems at IEEE ICASSP 2024, helping manage the peer-review process. Served as Reviewer for IEEE ICASSP 2023.

Research Mentorship:

- Guided an undergraduate student during development of a pipeline for an AI project.

Teaching Support:

- Graded coursework in Principles of Electronics.