

Amirmohammad Mohammadi

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RESEARCH INTERESTS

Deep Learning; Foundation Models; Parameter-Efficient Fine-Tuning; Algorithm Development; AI for Health, Scientific AI; Physics-informed ML; Signal Processing; Time-series analysis; Audio & vision multi-modal AI

EDUCATION

Texas A&M University, College Station, Texas December 2026 (anticipated)
Doctor of Philosophy in Computer Engineering

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

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

SKILLS

- **AI & data science** (Python; PyTorch; NumPy; VS Code; High-performance Computing)
- **Electrical & Computer Engineering** (Circuit & system design; Embedded systems; SPICE; MATLAB; C)

EXPERIENCE

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

Ph.D. Research Assistant

- **Reduced** Transformer-based foundation models fine-tuning parameters (**>10%**) compared to conventional adapters by developing a distribution-aware algorithm.
- **Raised** classification accuracy of a convolutional-based deep learning model **7 percentage points** by constructing a time-frequency feature engineering for audio applications.
- **Cut** required ground truth by a factor of **15** in physiological time-series signals by using physics-informed neural networks for blood pressure measurement & domain knowledge integration.

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

Graduate 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).

PUBLICATIONS

- Neighborhood Feature Pooling for Remote Sensing Image Classification., *Orvati Nia, F., Mohammadi, A., Al Kharsa, S., Naikare, P., Hampel-Aria, Z., & Peebles, J.*, (2026). IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops (Computer Vision for Earth Observation). [\[link\]](#)
- Histogram-based Parameter-efficient Tuning for Passive Sonar Classification., *Mohammadi, A., Carreiro, D., Van Dine, A., & Peebles, J.*, PREPRINT. [\[link\]](#)
- Structural and Statistical Audio Texture Knowledge Distillation (SSATKD) for Passive Sonar Classification., *Ritu, J., Mohammadi, A., Carreiro, D., Van Dine, A., & Peebles, J.*, PREPRINT. [\[link\]](#)
- Investigation of Time-Frequency Feature Combinations with Histogram Layer Time Delay Neural Networks., *Mohammadi, A., Masabarakiza, I., Barnes, E., Carreiro, D., Van Dine, A., & Peebles, J.*, (2025). IEEE OCEANS. [\[link\]](#)
- Cross-Domain Knowledge Transfer for Underwater Acoustic Classification Using Pre-trained Models., *Mohammadi, A., Kelhe, T., Carreiro, D., Van Dine, A., & Peebles, J.*, (2025). IEEE OCEANS. [\[link\]](#)

- Physics-informed neural networks for modeling physiological time series for cuffless blood pressure estimation., *Sel, K., Mohammadi, A., Pettigrew, R. I., & Jafari, R.* (2023). Nature NPJ Digital Medicine, 6(1), 110. [[link](#)]
- An integrated human stress detection sensor using supervised algorithms., *Mohammadi, A., Fakharzadeh, M., & Baraeinejad, B.* (2022). IEEE Sensors Journal, 22(8), 8216-8223. [[link](#)]

HONORS, AWARDS, & EXTRACURRICULARS

- **Received** fully-funded Ph.D. position through Massachusetts Institute of Technology Lincoln laboratory.
- **Received** fully-funded Ph.D. position through National Institute of Health.
- **Received** funded tuition through National University Entrance Exam for M.Sc. studies.
- **Received** funded tuition through National University Entrance Exam for B.Sc. studies.
- **Provided** continued guidance on developing AI projects for undergrad and grad students.
- **Reviewer** for the 2023 IEEE International Conference on Acoustics, Speech and Signal Processing.
- **Helper** for the 2024 IEEE International Conference on Acoustics, Speech and Signal Processing.
- **Reviewer** for the Expert Systems With Applications international journal.
- **Graded** exams and homework for undergrad electronics course.

LANGUAGES

English (proficient); **Farsi** (native/bilingual); **Azerabijani Turkish** (native/bilingual)