Amir Mohammadi

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RESEARCH INTERESTS

Fundamental and applied artificial intelligence; AI Engineering; Deep learning; Data science; Signal processing

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 by developing a distribution-aware parameter-efficient algorithm.
- **Raised** classification accuracy of a convolutional-based deep learning model **7 percentage points** 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. (Python; PyTorch; NumPy)
- **Received** research assistantships funded by NIH, MIT Lincoln Lab, and Texas A&M ECEN
- **Received** IEFS Graduate ISS Scholarship

EDUCATION

Texas A&M University, College Station, Texas — December 2026 / May 2027 (anticipated)

Doctor of Philosophy in Computer Engineering

PUBLICATIONS

- Neighborhood Feature Pooling for Remote Sensing Image Classification., *Orvati Nia, F.,* ***Mohammadi, A.****, Al Kharsa, S., Naikare, P., Hampel-Aria, Z., & Peeples, J.*, PREPRINT. [link]
- Histogram-based Parameter-efficient Tuning for Passive Sonar Classification., ***Mohammadi, A****., Carreiro, D., Van Dine, A., & Peeples, J.,* PREPRINT. [link]
- Structural and Statistical Audio Texture Knowledge Distillation (SSATKD) for Passive Sonar Classification., *Ritu, J.,* ***Mohammadi, A****., Carreiro, D., Van Dine, A., & Peeples, 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., & Peeples, 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., & Peeples, 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]

LEADERSHIP & SERVICE

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