Amirmohammad Mohammadi

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EDUCATION

Texas A&M University, College Station, Texas, USA
Doctor of Philosophy in Electrical and Computer Engineering Sept. 2022 – Present

Sharif University of Technology, Tehran, Iran
Master of Science in Electrical Engineering Sept. 2018 – Feb. 2021
Thesis: AI-Enhanced Biomedical System for Human Stress Detection and Monitoring
Cumulative GPR: 15.48/20

University of Tabriz, Tabriz, Iran
Bachelor of Science in Electrical Engineering Sept. 2014 – Sept. 2018
Cumulative GPR: 16.49/20

PEER REVIEWED PUBLICATIONS PUBLISHED

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.

Mohammadi, A., Fakharzadeh, M., & Baraeinejad, B. (2022). An integrated human stress detection sensor using supervised algorithms. *IEEE Sensors Journal*, *22*(8), 8216-8223.

RESEARCH EXPERIENCE

Department of Electrical and Computer Engineering, Texas A&M University Sept. 2022 – Present
Graduate Research Assistant, Advisor: Prof. Roozbeh Jafari
My research is related to physiological signals analysis and prediction with AI algorithms.
- Physics-informed neural networks for modeling cardiovascular dynamics.

2023 IEEE International Conference on Acoustics, Speech and Signal Processing Engineering 2023
Reviewer
Conducted reviews of three submitted papers and provided constructive feedback to authors.

Department of Electrical Engineering, Sharif University of Technology Jul. 2019 – Feb. 2021
Graduate Student, Advisor: Prof. Mohammad Fakharzadeh
My research aimed to develop a low-power sensor for human mental stress diagnosis.
- Software domains included applied signal processing and machine learning algorithms.
- Hardware domains included microcontroller programming, schematics, PCB design, and collecting signals.

PRESENTATIONS

CONFERENCE PRESENTATIONS

Mohammadi, A., & Fakharzadeh, M. (2020, August). Stress Detection Using Smart Wristband and Unsupervised Algorithms. In *Proceedings of the 28th Iranian Conference on Electrical Engineering* (pp. 382-387). Tabriz, Iran. [In Farsi Language]

POSTER PRESENTATIONS

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

TEACHING EXPERIENCE

Department of Electrical Engineering, Sharif University of Technology Sept. 2019 – Dec. 2019
Grading the assignments of *Principles of Electronics course and resolving the disputes*

LEADERSHIP

2024 IEEE International Conference on Acoustics, Speech, and Signal Processing Oct. 2023 – Dec. 2023

Helper/Area Chair - Applied Signal Processing Systems

- Assigned and managed the peer-review process, ensuring a high standard of scholarly evaluation.

SELECTED COURSE PROJECTS

Examination of wireline delay variation in 180 nm, 22 nm, and 7 nm technologies Spring 2020

Final Course Project of Modeling & Design of VLSI Interconnects Systems

- Effects are shown by the Monte Carlo method (HSPICE & MATLAB)

Design and simulation of an operational amplifier in 180 nm CMOS TSMC technology Fall 2019

Received highest project grade in the class in CMOS Circuit Design 1

- The process corners (SS, FF, FS, SF, TT), the temperatures of -40 to 120 ℃, and supply voltages of 1.65 v to 1.80 v
- Worst case: gain > 74 dB, unity-gain frequency > 300 MHz, phase margin > 46°, total current < 9 mA (BSIM3)

Design and simulation of a bandgap voltage reference in 180 nm CMOS TSMC technology Fall 2019

Course project of CMOS Circuit Design 1

- An output voltage of 1.2643 v, a temperature coefficient of 14.8 ppm/℃ in the range of -40 to 120 ℃
- A line sensitivity of 0.83% in the supply voltage range of 1.62 to 1.98 v (BSIM3)

Review and simulation of mm-wave phased array structures Spring 2019

Final course project of Phased Array Systems

- Analysis of the beam pattern of linear, circular, and square arrays (MATLAB).
- Analysis of phase shifters based on hybrid90 and vector sum modulator (ADS)