Seyedeh Sara **Hosseini**

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Research Profile

Biomedical engineer and aspiring PhD researcher with strong background in biomedical signal processing, computational neuroscience, and AI applications in healthcare. Experienced in applying advanced machine learning and deep learning methods to physiological data for disease diagnosis and patient monitoring. Skilled in interdisciplinary collaboration with clinicians and researchers, with a growing record of peer-reviewed publications and journal reviewing. Motivated to pursue research in computational methods for neuroscience, neurodegenerative disorders, and precision medicine.

Education

Master of Science in Biomedical Engineering (Major in Bioelectric) (Sep. 2021 - Aug. 2023)

Islamic Azad University Central Tehran Branch (Tehran, Iran)

Thesis: "ADABOOST-assisted decision-level fusion for anxiety diagnosis"— developed and validated machine learning models for EEG data classification under supervision of Dr. Keivan Maghooli (Supervisor) and Dr. Fardad Farrokhi (Advisor).
GPA: 18.40 Out of 20.0 (3.7 out of 4.0)

Bachelor of Science in Biomedical Engineering (Major in Bioelectric) (Jan. 2017 - Feb. 2021)

Islamic Azad University, Tehran Medical Branch (Tehran, Iran)
Capstone Project: Designed and built a Transcutaneous Electrical Nerve Stimulation (TENS) device, covering full cycle from circuit design and hardware implementation to programming and testing.

GPA: 17.05 out of 20.0 **(3.41 out of 4.0)**

Research Interests

- Biomedical signal processing, computational neuroscience, and neuroimaging (EEG, fMRI).
- Application of machine learning and deep learning for disease diagnosis, neurodegenerative disorders, and cognitive neuroscience.
- Integration of multimodal biomedical data for precision medicine and brain–computer interface (BCI) applications.

Publications

- Hoseini, S. S., & Maghooli, K. (2024). Enhancing Anxiety Diagnosis Through ADA BOOST-Assisted Decision-Level Fusion. Journal of Current Trends in Computer Science Research, 3(3), 01–10.
- Hosseini, S. S. (2021). Effects of Electrotherapy on Delayed Onset Muscle Soreness (DOMS). Journal of Biomedical Research & Environmental Sciences, ISSN 2766-2276. https://doi.org/10.37871/jbres1313
- Hosseini, S. S. (2025). A Review on Deep Learning Techniques for Medical Image Segmentation and Classification. Journal of Advanced Artificial Intelligence, Engineering and Technology. https://doi.org/10.56147/1.4.36
- Hosseini, S. S. (Under review). Bridging the gap: Exploring the parallels and disparities between artificial intelligence and human intelligence: A review. Journal of Biomedical Research & Environmental Sciences.

Academic Service

- Peer Reviewer (Ongoing) — Biomedical Signal Processing and Control (Elsevier Journal)
- Peer Reviewer — Asian Journal of Advanced Research and Reports (Certificate of Excellence in Reviewing, 2025)
- Peer Reviewer — Book Chapter Contemporary Research and Perspectives in Biological Science: Bioelectronic Interpretation of Human Cognitive Processes (BPI International, 2024)

Certificates

- "Advanced Comprehensive Course: Neurological Data Processing with Deep Learning Methods Based on Python," Issued by National Brain Mapping Laboratory. (Apr. 2024)
- "Comprehensive Course on Artificial Intelligence in Neuroscience Data Processing Based on Python," Issued by National Brain Mapping Laboratory. (Feb. 2024)
- " Electronics" Issued by Tehran Institute of Technology (Apr. 2021)
- "Troubleshooting and Repairing Laboratory Equipment," Issued by Global Knowledge Village. (Sep. 2020)

Languages

- **English** (TOEFL test score : 82) - 2024
- **Persian** (Native)

Skills

• Signal Processing & Machine Learning (MATLAB, Python, ML toolkits)

• Biomedical Data Analysis (EEG, ECG, fMRI preprocessing)

• Hardware & Instrumentation (Circuit design, biomedical device prototyping)

Notable Courses

- "Linear Control Systems": (20.0 out of 20.0)
- "Microprocessors (I)": (20.0 out of 20.0)
- "Computer Programming": (19.50 out of 20.0)
- "Bioelectrical Phenomena": (19.50 out of 20.0)
- "Artificial Neural Networks": (20.0 out of 20.0)
- "Wavelet and its applications in signal and image processing": (20.0 out of 20.0)
- "Fuzzy Systems": (20.0 out of 20.0)
- "Digital Signal Processing": (19.20 out of 20.0)

References

- Dr. Keivan Maghooli
  Associate Professor, Faculty of Medical Engineering
  Science and Research University, Tehran
  MSc Thesis Supervisor
  Email: keivanmaghooli87@gmail.com

- Dr. Fardad Farokhi
  Assistant Professor, Faculty Member
  Islamic Azad University, Central Tehran Branch
  MSc Thesis Advisor
  Email: fardadfarokhi5@gmail.com