

S. SADRA MOUSAVI

Tehran, Iran



Email



Website



LinkedIn



GitHub

EDUCATION

Shahid Beheshti University

Tehran, Iran — Sep 2022 – Present

B.Sc. in Computer Engineering

GPA: 18.43/20

Allameh Helli "NODET" High School

Tehran, Iran — Sep 2019 – Aug 2022

High School Diploma, Mathematics and Physics

GPA: 19.39/20 (4/4)

RESEARCH INTERESTS

Embedded Systems
Edge Computing

Digital Twins
Embedded AI

Internet of Things (IoT)
Computer Networks

HONORS & AWARDS

Top 10% Academic Standing

sep. 2025

Ranked among the top 10% of undergraduate students in the Computer Engineering cohort (approximately 100 students).

Iranian National University Entrance Examination

sep. 2022

Achieved Rank 71 among more than 37,000 participants in the Regional Quota.

LANGUAGES

Persian: Native **English:** Professional Working Proficiency

TOEFL iBT: Scheduled for November 7, 2026

SELECTED PROJECTS

Edge AI Motion Classification with MPU6050 [View Source Code](#)

- Developed an AIoT pipeline for real-time motion classification using simulated MPU6050 sensor data.
- Ran local Edge AI inference with an Edge Impulse model and visualized results through MQTT and ThingsBoard.
- Technologies: TypeScript, Edge Impulse, WebAssembly, MQTT, ThingsBoard, MPU6050

KNX Smart Home with ThingsBoard & AI Assistant [View Source Code](#)

- Developed a smart-home IoT system integrating KNX with ThingsBoard for real-time monitoring and control.
- Added a local AI assistant using MCP and Ollama for Persian natural-language interaction with smart-home devices.
- Technologies: KNX, ThingsBoard, MQTT, TypeScript, MCP, Ollama

Model-Based Embedded Real-Time Heating Controller [View Source Code](#)

- Designed and modeled a real-time multi-room heating control system using MATLAB Simulink and Stateflow following the V-Model development process.
- Implemented thermostat logic, safety checker, and room temperature dynamics using model-based design and requirement-driven architecture.
- Performed simulation, validation, and test coverage analysis using Simulink Test and Embedded Coder workflows.

- Technologies: MATLAB, Simulink, Stateflow, Model-Based Design, C

TEACHING EXPERIENCE

Head Teaching Assistant — Embedded and Real-Time Systems

Fall 2026 – Spring 2027

Dr. Seyed-Hosein Attarzadeh-Niaki

- Led teaching assistant activities, including assignment management and student support.
- Managed assignment submissions, provided technical guidance, and conducted problem-solving sessions.

Teaching Assistant — Advanced Programming

Fall 2023 – Spring 2025

Dr. Mojtaba Vahidi-Asl

- Served as Head of the Workshop Team, coordinating teaching assistants responsible for workshop sessions.
- Delivered programming workshops and presented advanced programming concepts to undergraduate students.

Teaching Assistant — Operating Systems Concepts

Fall 2024 – Spring 2025

Prof. Mohsen Ebrahimi Moghadam

- Designed programming assignments and course projects covering operating system concepts.
- Assisted in presenting course materials and guiding students throughout project implementation.

Teaching Assistant — Computer Architecture

Fall 2024 – Spring 2025

Dr. Dara Rahmati

- Designed programming assignments and course projects related to computer architecture.
- Assisted students in understanding processor architecture and low-level system concepts.

SKILLS

Programming: C/C++, Python, Java, C#

Low-Level Programming: x86 Assembly, ARM Assembly

Hardware Description Languages: Verilog

Embedded: STM32, ESP32, ARM Cortex-M, Arduino

Frameworks & Libraries: Scikit-learn, Pandas, NumPy, Matplotlib

Databases: PostgreSQL, MySQL

Tools: Git, Docker, Linux, MATLAB, Simulink

Soft Skills: Leadership, Teamwork, Communication, Time Management, Presentation

ACADEMIC SERVICE

Editorial Team Member — Faculty Scientific Magazine

Spring 2024 – spring 2025

Supervised by Prof. Shams Aliee

- Contributed to the editorial and publication process of the faculty's scientific magazine.
- Assisted in reviewing, editing, and preparing academic content for publication.

Executive Committee Member — University Conference on Artificial Intelligence

Supervised by Dr. Salimi Badr

- Served as a member of the executive committee for the university's Artificial Intelligence Conference.
- Assisted in conference organization, coordination, and event execution.