

M.Mahdi Sharifian

🔧 Electrical Engineer

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🌐 mmahdishrf

🎓 Education

B.Sc. in Electrical Engineering from Amirkabir University of Technology:

Thesis Topic: "Design and Development of an IoT-Based EEG Signal Acquisition System"
[GitHub](#)

Relevant Courses:

- Microprocessor Systems & Interfaces *Grade : A+*
- Parallel Programming & Interfaces *Grade : A+*
- FPGA *Grade: A++*
- Computer Architecture *Grade: A++*
- Digital Signal Processing *Grade : A++*
- Algorithm Design *Grade: A+*
- Linear Algebra *Grade: A+*
- VLSI *Grade: A++*
- Data Structure *Grade: A+*
- Advanced Programming (Object Oriented Programming) *Grade: B++*

Awards:

- Scored in the top 0.43% in BSc entrance exam
- Ranked 3rd in average grade among Digital Systems minors, a cohort of 2018
- Achieved an average score of 18.18 out of 20 in Bachelor of Science (BSc) degree.
- Achieved 19th place in the MSc entrance exam

🏢 Work Experience

Itherm AI: *Intern*

Gathering benchmarks and datasets through web scraping using Python.

Mehbang Group: *Intern*

Design and development of embedded systems to be used as testers in the quality control process.

Mehbang Group: *R & D Expert*





Design and development of embedded systems to be used as elevator control panels.

Design and development of embedded systems to be used as MD voltage drivers. Design and development of embedded smart IoT-Based systems to process and transmit data

Technical Skills

- Relevant Electrical Engineering Software like Matlab, Hspise, Pspise, and ADS
- High-level Programming Languages like C, Embedded C, C++, and Python.
- Designing Embedded Systems based on different types of Microcontrollers such as ST, AT, and Arduino.
- Web development technologies including JavaScript, CSS, and HTML
- PCB Design with Altium Designer
- Familiar with Machine Learning (ML) and Neural Networks (NN)
- Design and Development of systems based on FPGA with Verilog and VHDL
- Design and Development of UI apps using C# and .NET framework

Certifications

-  Basic Implementation of ML and Neural Networks in Python
-  PCB design in Altium
-  ST Microcontrollers Embedded Systems Design
-  Fundamentals of Digital Image and Video Processing

Notable Projects

Design and Development of ESP32-C3 Module Programmer: I designed and developed a PCB, its microcontroller firmware, and a user interface to program and test up to three ESP32-C3 modules simultaneously. I used a microcontroller to establish a serial connection with each ESP32 module, transfer data to them, and send their feedback to the host computer. Additionally, I created a customized UI for this hardware that includes features such as the ability to encrypt the flash of ESP32-C3 modules, selectable baud rates, and more. A basic version of this project can be seen on my [GitHub](#):

Design and Development of FPU(Floating Point Unit) of a CPU with VHDL: We designed a modular map of FPU and then developed each module in VHDL. After testing each module separately, we used them in our main module and developed an FPU that had two 32-bit with IEEE-754 standard format for floating point numbers, one output with the same standard and input to denote the operation that FPU had to do. In the end, the FPU passed all the tests and after a few clocks, the result was ready at the output. [GitHub](#)

Basic Web-Based Messenger with Private and Group Chat Features: In this project, we designed a messenger on both the client and server sides. We used Python's libraries to develop both the server and client sides. In the end, we run our server-side code on an online system and users can run client-side code which is a desktop app on their system to send and receive messages. I contributed to this project as a developer and my main focus was on client-side. This project was a good experience that helped me to truly understand how to use OOP in real-life projects. for further information see this project's [GitHub](#) page at this address: [GitHub](#)

Development of an IoT Patient Monitoring device with features for Monitoring Temperature, Heartbeat, and Blood Oxygen level : We designed and developed a system that has an Arduino as master and other modules as slaves. we had three modules that sent data through I2C including temperature, heartbeat, and Blood Oxygen sensors. Also, we had a small OLED monitor to show data. In addition to the OLED monitor, with the ESP32 module, we send our data through the WiFi to a web server. Then, the user can go to a specific online page and monitor the received data online.


Development of a CPU based on MIPS Architecture with VHDL: In this Project, we developed each module that a modular architecture of CPU in MIPS architecture has. then we implement most of the instructions in the instruction list of MIPS architecture. We designed a multi-cycle CPU that executes each instruction in several clock cycles. After designing the CPU we designed a small section of memory as our memory for a program that must be executed. Then we set the PC register to Start from the first cell of memory and execute the program instruction by instruction.

Design and Simulation of Op-Amp: In this project, we designed and then simulated an Op-Amp in ADS software. Our design met specific parameters to gain, CMRR and band-width.

Basic IoT Receiver and Transmitter using Zigbee Module and ST Microcontroller: In this project, I implemented and designed firmware that can receive and transmit data. I used an ST micro-controller and Zigbee module

Languages

 Persian - Native

 English - Education