MOHADESEH AZARI

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EDUCATION

B.Sc.

Electrical Engineering – Overall GPA : 3.54/4.0 (16.72/20.0)

September 2017 – December 2021 University of Tehran

Minor

Physics – Overall GPA : 3.75/4.0 (16.79/20.0)

September 2018 – December 2021 University of Tehran

Diploma

Mathematics and Physics Discipline – Overall GPA : 4.0/4.0 (19.98/20.0)

September 2013 – June 2017 NODET high school

RESEARCH EXP AND INTERNSHIP

Quantum Communication

Quantum Error Correction for Quantum Memory

November 2020 – (ongoing project) University of Tehran

- Supervisor: Dr.Zahra Shaterzadeh Yazdi (Faculty of Engineering Sciences)
- Evaluating different aspects of ATS and EIT protocols
- Simulating different Error Correction Code for the best result

Quantum Communication

Long Distance Quantum Communication and Quantum Repeaters

January 2021 – September 2021 University of Tehran

- Supervisors: Dr.Leila Yousefi (Faculty of Electrical and Computer Engineering)
- Dr.Saleh RahimiKeshari (Faculty of Physics)
- Accessing Long Distance Quantum Communication trough Focusing on Quantum Repeaters
- Applying Software Tools to Implement Quantum Gates

Digital Logic Design

Digital Logic Design Laboratory

January 2019 – September 2021 University of Tehran

- Lab Supervisors: Dr. Zainalabedin Navabi Shirazi (Faculty of Electrical and Computer Engineering)
- Assisting in workshops for the first-year students in creating and simulating Logic Designs Circuits on a breadboard.
- Assisting in IOT workshops with Arduino tool kit. Helping students implement projects with Arduino Uno, sensors like Ultrasonic sensors, and analyzing results with the software.

Brain Network

The Correlation between Brain and Digital Networking Methods

June 2020 – October 2020 University of Tehran

- Supervisor: Dr. Maryam Sabaghiyan (Faculty of Electrical and Computer Engineering)
- Neural Communication vs. Communication Engineering
- The application of communication engineering methods in Neural Diseases
- Model Neuro Abnormalities as Noises and Represent Mathematical Solutions for Noisy Network

INTERESTS

Quantum Communication
Quantum Memory and Repeaters
Cryptography
Network Security
Information Theory

TEACHING EXPERIENCES

- Digital Signal Processing – Fall 2020 – Dr.Zainalabedin Navabi Shirazi –
- Digital Logic Design Lab – Fall 2020 – Dr.Zainalabedin Navabi Shirazi –
- Physics II – Spring 2020 – Dr.Zahra Shaterzadeh Yazdi –
- Introduction to Computing Systems and Programming – Spring 2020 –Dr.Manouchehr MoradiSabzevar –
- Digital Logic Design – Spring 2020 – Dr.Zainalabedin Navabi Shirazi –
- Electrical Engineering General Workshop – Fall 2019 – Dr.Mahmoud Shahabadi –
- Digital Logic Design – Fall 2019 – Dr.Zainalabedin Navabi Shirazi –

CERTIFICATES

IELTS : International English Language Testing System

Overall : 7.5
Listening 8 / Writing 6 / Reading 8 / Speaking 7

July 2021

Matlab

IEEE university of Tehran

July 2017

Arduino

IEEE university of Tehran

July 2017

PROJECT

Electrical Engineering

Academic Projects

September 2017 – December 2021 University of Tehran

- Signal Processing

- Shazam demo – This project aims to get a short song sample; first, it will recognize the song and then search for it on a table. Finally, it will return the necessary data about that song – Matlab
- Steganography – This project aims to decode a given message in Moneliza's Picture by encoding every letter in the color code of the picture's pixels – Matlab
- Face Detection – This project aims to detect a person's identity by its picture. for doing that, at first, the project receives up to 10 images of that person in a different gesture – Matlab
- Complete OFDM Modulation – This project aims to model a complete OFDM modulation. It seeks to model both sender and receiver sides with complete decoding modules. The final purpose of this project is to compare the effects of different channels with response to OFDM protocol – Matlab
- Voice and Image Processing – One of the voice processing projects was detecting a specific person's talk in a group of people. That conversation could be a background voice, but as long as having a sample of that person's voice, it can detect the conversation – C

- Network Security

- Email Security – This project aims to send an email with certification. The messages are encrypted as well. One can buy public and private pairs online – Python
- RSA Protocol – This project aims to implement a complete RSA protocol using python. All the messages are encrypted with specific pairs– Python
- Chatroom – This project aims to create both client and server-side in a local chatroom. The username of every user is added to a table. Only the admin of the network can see the table – Python
- Email Spoofing – This project aims to use libraries in Linux to spoof an email. we were a team, and we chose one of our email address to attack – Ubuntu
- Packet Tracing – Using Wireshark and terminal commands, one can trace all the packages from their network to the internet server – Wire-shark

- Computer Architecture

- Function Generator – This project could model a complete Analog function generator using Modelsim. The project modeled more than six different waves and could get an arbitrary wave as input – Quartus + Modelsim
- Frequency Synchronizer – One of the essential parts of every digital system is the clock. If the clocks lose their synchronization, the efficiency of the whole system is under threat – Quartus + Modelsim
- MIPS Processor – Complete single-cycle MIPS processor – Quartus + Modelsim
- Pipe lining – A multi-cycle processor using pipelining – Quartus + Modelsim

- Games

- PAC-Man Game – A complete Pacman game with all the features using C – C
- Inverted Pendulum – An inverted pendulum is a two-phase project. In phase I, all the codes are simulated on Matlab, and an animated pendulum act as a test using Simulink, Matlab. In phase II, all the codes are tested on an actual system design for this project in the control laboratory – Matlab + Physical Design

HONORS

- Top 0.25 of the Electrical Engineering Student at University of Tehran – 2021
- Top 0.003 of the Nationwide Iranian Entrance University Exam – 2017
- Semi-Finalist of National Physics Olympiad – 2016

TECHNICAL SKILL

Python	●●●●●
Verilog/System Verilog	●●●●●
Matlab/Mathematica	●●●●●
latex	●●●●○
Qiskit	●●●●○
Wire-Shark	●●●●○
linux	●●●●○
Auto CAD	●●●●○
Arduino microcontroller	●●●●○
Pyquil	●●●○○
C/C++	●●●○○
HTML	●●●○○
R	●●●○○
Spice	●●●○○
LC3	●●●○○

WORKSHOPS AND CONFERENCES

- QCALL Conference On Quantum Repeaters And Quantum Memory – 2021
- Qiskit Seminar, Error Mitigation For Universal Gates On Encoded Qubits – 2021
- Dr.Erhan Saglamyurek's Lecture On ATS BEC Memory – 2021
- Qiskit Online Summer School – 2020

ONLINE COURSES

- Quantum Cryptography (Edx)
- Quantum Optics (Coursera)
- Machine Learning (Maktabkhooneh)
- HTML (Faradars)
- Advanced Programming (Maktabkhooneh)
- Neuro Science I,II (Edx)