

# Fatemeh Karimi Barikarasfi

☎ (0933) 794 6278 • ✉ fatemehkarimi2178@gmail.com • in fatemehkarimi2178

## Education

### Iran University of Science and Technology

*Bachelor of Science*

**Sept. 2017 - Jan. 2022**

*Tehran, Iran*

B.Sc in Electrical Engineering (Telecommunication)

- GPA: 15.92/20
- Last two years GPA: 16.53/20

### Young Scholar Club

*Physics*

**June. 2016 - Aug. 2016**

*Tehran, Iran*

- Got Bronze Medal

### Farzanegan2 High School

*Diploma in Mathematics and Physics*

**Sept. 2013 - June. 2017**

*Tehran, Iran*

- Pre-university GPA: 18.86/20
- Diploma GPA: 17.86/20

## Research Interest

- Theoretical Physics
- Mathematics and Statistics
- Computational Neuroscience
- Signal Processing

## Research Experience

### Undergraduate Research Assistant

*Iran University of Science and Technology, Department of Electrical Engineering*

**Apr. 2021 - Oct. 2021**

- Worked on Routing algorithms analysis ( Dijkstra, Bellman-Ford, and Q-Routing) on Static and Dynamically Changed Networks modeled by Queuing Theory  
*Under the supervision of Prof. Shahrokh Farahmand*  
*Grade Point: 20/20*

## Achievements

- Member of Iran's National Elites Foundation 2016 – Ongoing
- Received Bronze Medal in Iran's National Physics Olympiad 2016
- Member of National Organization for Development of Exceptional Talents 2011 - 2017

## Technical Skill

- **Programming Language**  
Python, C/C++, MATLAB
- **Framework and Library**  
NumPy, Pandas, Matplotlib, TensorFlow, Keras, Scikit-learn, NetworkX
- **Professional Software**  
P-Spice, H-Spice, OMNeT++, HFSS
- **Technology**  
Git, VSCode

## Notable Project

### Linear Control Systems

- DC Motor Transfer Function Estimation using System Identification Toolbox of MATLAB
- DC Motor Position and Velocity Controller Design using Phase-Lag, Phase-Lead, and PID Controllers using MATLAB

## Digital Communication

- Implementation of QAM, BPSK, FSK, and MI Modulation and Detection Algorithms in AWGN Channel using MATLAB
- Implementation of QPSK and BPSK Modulation and Detection Algorithms in Rayleigh Fading Channel using MATLAB
- Implementation of Hamming Code and its Detection Algorithm in AWGN Channel using MATLAB

## Digital Signal Processing

- Implementation of OFDM Sender and Receiver using MATLAB
- Speech Signal Denoising using Implemented FIR and IIR Filters using MATLAB

## Electronic Circuit

- Circuit Design and Simulation of following Electrical Circuits: Voltage Regulator, Electrical Thermometer, and several Voltage and Current Amplifiers using P-Spice
- Design and Simulation of following Integrated Circuits: an Operational Amplifiers, a Current Source, and a Folded Cascode Amplifier using H-Spice

## Economic Engineering

- Economic Evaluation of a Homemade Solar Power Plant by EXCEL

## Antenna

- Cross Dipole Antenna Design, Simulation, and Analysis using HFSS

## Online Course and Selected Certificate

---

### Python Programming | by PYTOPIA

- **Covered Topics** : Object Oriented Programming and Modularization, Advanced Topics including Decorators, Exceptions, Iterators and Generators, Descriptors, Serialization (JSON, YAML, Pickle), itertools, pytest, concurrency (Thread, Process)

### The Brain and Space | by Duke University

- **Covered Topics** : Vision, the Body and Neural Signals, Brain Maps, Sound and Brain Representation, Representations, Reference Frames and Navigation, Memory and Cognition

### Brain Mapping Spring School | by National Brain Mapping Laboratory

- **Covered Topics** : Introduction to Brain Anatomy, Neuroscience and Cognitive Science, and Brain Imaging, Fundamentals of EEG, MRI, fNIRS, TMS/TES, and Neurofeedback

### FPGA Course | by IEEE Student Branch of Iran University of Science and Technology

- **Covered Topics** : Introduction to Verilog and VHDL

## Volunteer Experience

---

### High School Mathematics and Physics Teacher

- Teaching geometry, discrete mathematics, calculus, and physics

## Reference

---

### Prof. Shahrokh Farahmand | Assistant Professor at Iran University of Science and Technology

- sha.farahmand@gmail.com

### Prof. Farzan Haddadi | Associate Professor at Iran University of Science and Technology

- farzanhaddadi@iust.ac.ir

## Language

---

- **English** TOEFL iBT: 93/100 (Reading: 27 | Listening: 28, | Speaking: 19 | Writing: 19)
- **Persian** Native