FATEMEH KARIMI BARIKARASFI

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Education

Sept. 2017- Jan. 2022 — **Iran University of Science and Technology** — *Tehran, Iran*
B.Sc in Electrical Engineering (Telecommunication)
- GPA: 15.92/20
- Last two years GPA: 16.53/20

June. 2016- Aug. 2016 — **Young Scholar Club** — *Tehran, Iran*
Physics
- Got Bronze Modal in 29th National Physics Olympiad

Sept. 2013 - June. 2017 — **Farzanegan2 High School** — *Tehran, Iran*
Diploma in Mathematics and Physics
- Pre-university GPA: 18.86/20
- Senior High School GPA: 17.86/20

Research Interest

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

Research Experience

Apr. 2021 - Oct. 2021 — **Undergraduate Research Assistant** — *Tehran, Iran*
Department of Electrical Engineering, Iran University of Science and Technology
- 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

Achievement

2016 – Ongoing
- Member of Iran's National Elites Foundation

2016
- Received Bronze Medal in Iran's National Physics Olympiad

2011 – 2017
- Member of National Organization for Development of Exceptional Talents

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

Course Project

Linear Control Systems
- DC motor transfer function estimation *by System Identification Toolbox of MATLAB*
- DC motor position and velocity controller design (Phase-Lag, Phase-Lead, and PID) *by MATLAB*

Digital Communication

- Implementation of QAM, BPSK, FSK, and Ml modulation and detection algorithms in AWGN Channel *by MATLAB*
- Implementation of QPSK and BPSK modulation and detection algorithms in Rayleigh Fading Channel *by MATLAB*
- Implementation of Hamming code and its detection algorithm in AWGN Channel *by MATLAB*

Digital Signal Processing

- Implementation of OFDM sender and receiver *by MATLAB*
- Speech signal denoising using implemented FIR and IIR filters *by MATLAB*

Electronic Circuit

- Circuit design and simulation of following Electrical Circuits: Voltage Regulator, Electrical Thermometer, and several Voltage and Current Amplifiers *by P–Spice*
- Design and simulation of following Integrated Circuits: an Operational Amplifiers, a Current Source, and a Folded Cascode Amplifier *by H–Spice*

Economic Engineering

- Economic evaluation of a homemade solar power plant *by EXCEL*

Antenna

- Cross Dipole Antenna design, simulation, and analysis *by HFSS*

Online Course

Dec. 2023 - Apr. 2024

Machine Learning Specialization

by Stanford University

- **Covered Topics**: Supervised Machine Learning, Advanced Learning Algorithms, Unsupervised Learning, Recommenders, Reinforcement Learning

Apr. 2023

Brain Mapping Spring School

by National Brain Mapping Laboratory

- **Covered Topics**: Introduction and General Concepts, Introduction to Programming with Python 3, Dynamic Systems and Numerical Integration, Cellular Automata,Lattice Boltzman Modeling of Fluid Flow, Introduction to Discrete Events Simulation, Agent-based Models

Sept. 2022 - Mar. 2023

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)

Sept. 2019

FPGA Course

by IEEE Student Branch of Iran University of Science and Technology

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

Volunteer Experience

Feb. 2019 - Ongoing

Mathematics and Physics Teacher — *Tehran, Iran*

- 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