Amirmehdi Jafari Fesharaki

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Education

Bachelor of Science | ***Major: Electrical Engineering*** 2019 – 2023
Sharif University of Technology GPA: 19.02/20

Research Experience

Research Intern August 2022 – Oct 2023
Max Planck Institute for Intelligent Systems

- Development of a hybrid deferral system, which incorporates human guidance into the final prediction process. This innovative approach transcends traditional reliance solely on human decision-makers on deferral, with the goal of enhancing the accuracy and performance of deferral systems
  Under the supervision of Dr. Samira Samadi

Research Assistant March 2022 – July 2023
Technische Universität Berlin

- Development and analysis of an algorithm for a variation of the classical online caching problem where nodes should respect dependency relationships while hosted in the cache
  Under the supervision of Prof. Stefan Schmid

Research Assistant April 2021 – Jan 2023
Sharif University of Technology

- Establishment of a Software Defined Wide Area Network (SD-WAN) Laboratory through the utilization of ONOS, OVS (Open vSwitch), and Mininet technologies
  Under the supervision of Prof. Babak Khalaj

Teaching Assistant Feb 2021 – June 2023
Sharif University of Technology

- Introduction to Machine Learning - *Spring 2023*
- Software Defined Mobile Networks - *Spring 2023*
- Data Communication Networks - *Fall 2023*
- Deep Learning (MSc) - *Spring 2022*
- Digital Signal Processing - *Spring 2022*
- Electric Circuits and Lab - *Fall 2022*
- Electromagnetic - *Spring 2021*

Work Experience

R&D Engineer August 2022 – Ongoing
MCI R&D, Iran's Largest Mobile Operator

- Responsible for the deployment and maintenance of a Cloud-Native 5G core network
- Implemented QoS provisioning and enabled VoLTE support for non-VoLTE-enabled users within the LTE core
- Designed and developed a Non-3GPP Inter-Working Function (N3IWF) solution for 5G networks

International Young Physicists' Tournament (IYPT) Team Leader and Mentor Mar 2020 – June 2022
Ariaian Young Innovative Minds Institute, AYIMI

Honors and Awards

Ranked **Top 5%** Among Electrical Engineering Departmant Students

Bronze Medal in 32nd International Young Physicists' Tournament (2019)

Gold Medal in 31th Iranian National Physics Olympiad (2018)

Accepted in the first stage of National Computer and Astrophysics Olympiad

Course Projects

Digital Communications | *Matlab* Fall 2023
Simulation and investigation of the performance of various digital communication systems with different coding, modulations, and channel noise levels Github

Digital Image Processing (MSc) | *Python* Summer 2022
Implementation of various Digital Image Processing algorithms including image enhancement and filtering, coding and compression, detection and segmentation, etc. Github

Data Communication Networks (MSc) | *Python* Summer 2022
Simulation of a real-time simplified LTE system including User, eNodeB, SGW and MME using multi-threading and socket programming. Github

Communication Systems | *Matlab* Fall 2021
Simulation of a Digital Communication System including the analysis of PAM, PSK and FSK modulations in the presence of noises, and the statistical analysis of Huffman Source Coding Github

An Introduction to Machine Learning | *Python* Fall 2021
Intelligent Typing System using EEG signals by predicting whether the character the person is looking at is their desired character or not Github

Signals and Systems | *Python* Summer 2021
Designing a system which plays a song by getting the image of its sheet as the input Github

Selected Courses

Graph Signal Processing (MSc): 17.8/20

Deep Learning for Computer Vision: Audited

Digital Image Processing (MSc): 19.3/20

Data Communication Networks (MSc): 20/20

Software-Defined Mobile Networks (MSc): 18.5/20

Convex Optimization 1: 19.8/20

Communication Systems: 20/20

Digital Signal Processing: 19.9/20

An Introduction to Machine Learning: 19.7/20

Mathematical Methods in Engineering (Linear Algebra): 19.8/20

Languages

Persian: Native

English: TOEFL iBT Score 105

Skills

Programming Languages: Python, MATLAB, Java, C, MIPS, 8051 Microcontroller

Tools/Frameworks: CVXPY, PyTorch, NumPy, Pandas, Matplotlib, OpenCV, Git, Simulink, COMSOL, Proteus

Network Tools/Frameworks: Kubernetes, Docker, OpenVSwitch, Mininet, OpenDaylight, ONOS, NS3, GNS3, Wireshark

Operating Systems: Linux, Windows, MacOs

Document Creation: LaTeX, Microsoft Office, Markdown