

Ali Yaghoubian | Curriculum Vitae

☎ (+98) 930 646 4838

✉ Aliyaghoubiann@gmail.com

🌐 [LinkedIn](#)

🐙 [Github](#)

EDUCATION

University of Tehran [\[QS Ranking\]](#)

Tehran, Iran

M.Sc. in Electrical and Computer Engineering – Communication networks

Sep. 2022 – Present

Expected graduation: June 2024

Thesis: Digital Twin-Assisted Deep Reinforcement Learning for Intelligent Traffic Steering in O-RAN

Supervisor: Dr. V. Shah-Mansouri

GPA: 4/4 (19.51/20)

Amirkabir University of Technology (Tehran Polytechnic) [\[QS Ranking\]](#)

Tehran, Iran

B.Sc. in Electrical Engineering – Communications systems

Sep. 2017 – Dec. 2021

Thesis: Simulation of Open Radio Access Network

Thesis grade: A+

Supervisor: Dr. H. Beyranvand

GPA: 3.65/4 (17.27/20)

WORK EXPERIENCE

Electrical and Computer Engineering Department at University of Tehran

Tehran, Iran

Researcher and Developer at Cellular Networks Lab

Aug. 2023- Present

Intelligent Traffic Steering in Open Radio Access Network (O-RAN)

Digital Twins in Wireless Networks

Electrical and Computer Engineering Department at University of Tehran

Tehran, Iran

Teacher Assistant

Jan. 2023 – Jul.2023 / Sep. 2023 – Present

Neural Networks

Under supervision Dr. Ahmad Kalhor

Computer Engineering Department at Amirkabir University of Technology

Tehran, Iran

Project Team Lead at Cloud Computing Research Lab

Dec. 2022 – Aug. 2023

Artificial Intelligence as a Service (AlaaS) Platform

Electrical Engineering Department at Amirkabir University of Technology

Tehran, Iran

Researcher and Developer at Communication Networks Research Lab

Jun. 2020 – Sep. 2021

Project Team Lead in Communication Networks Research Lab

Sep. 2021 – Oct. 2022

Software-Defined Networking (SDN), Network Function Virtualization (NFV), and High-Performance Networking (HPN)
Software-Defined Radio Access Network (SD-RAN) and Open Radio Access Network (O-RAN)

HONORS

- **2023** Ranked **1st** in the Field of Communication Networks Engineering out of 12 Students.
- **2022** Ranked **Within the Top 1%** of the University Entrance Exam for the Master's Degree in Electrical Engineering.
- **2021** Ranked **Within the Top 20%** of the Graduated Bachelor Students from the Electrical Engineering Department at Amirkabir University of Technology.
- **2017** Ranked **Within the Top 1%** of the University Entrance Exam for the Bachelor's Degree in Electrical Engineering.

Selective Projects

Digital Twin-Assisted Deep Reinforcement Learning for Intelligent Traffic Steering in O-RAN

- Developing an LSTM-Based Digital Twin as xAPP *Aug. 2023 - Present*
- Developing a Traffic Steering xAPP using Deep Reinforcement Learning
- Implementation of ns-O-RAN

Distributed Learning [[Git repo](#)]

Dec. 2023 - Feb. 2024

- Traffic Forecasting using Federated Learning (FL) and Fully Distributed FL in RAN
- Reinforcement Learning (RL) and Multi-Agent RL for Coordinated Multipoint in RAN

Open Radio Access Network based on O-RAN Alliance Standards

Jun. 2022 - Dec. 2022

- Implementation of Near Real-time RAN Intelligent Controller (Near-RT RIC)
- Implementation of Non Real-time RAN Intelligent Controller (Non-RT RIC)
- Implementation Open Distributed Unit (O-DU)
- [Anomaly Detection](#) use case

Multi Access Edge Computing (MEC)

Feb. 2022 – Jun. 2022

- Developing a MEC router (UPF) by using [Click Router](#).
- Implementation of MEC platform and MEC platform manager based on ETSI standards using [EdgeGallery](#).
- Deploying [OpenRTiST](#) and [Darknet](#) as the MEC applications on MEC platform.

4G Testbed

Sep. 2021 – Feb. 2022

- End-to-End Simulation of a 4G Network by using OpenAirInterface project.

- VoLTE Setup using Kamailio IMS, Open5GS, and srsRAN projects.
- Connecting a COTS UE to the testbed using USRP B210.

RAN Slicing by using SD-RAN Project

Jun. 2023 – Oct. 2023

- Implementation of micro-ONOS Near-RT RIC and working with xAPPs such as onos-kpimon and onos-rsm.
- Implementation of OMEC, a 4G/LTE core network.
- Implementation of OAI UE/DU/CU and generating LTE control and user plane traffic.
- Managing the RAN slices with RAN Slice Management (RSM) xAPP.

High-Performance Networking

Mar. 2021 – Sep. 2021

- Setting up a high-performance router using VPP for GRE tunnelling and NAT.
- Performance analysis of GRE tunnelling, Load balancer, and NAT44 plugins in VPP using the TRex traffic generator.

Software-Defined Networking

Jun. 2020 – Feb. 2021

- OpenFlow protocol analysis.
- Simulation and implementation of an SDN network scenario with Mininet, MikroTik RouterOS, and ONOS controller.
- Automated system against BGP prefix hijacking ([ARTEMIS](#)).

Artificial Intelligence as a Service (AlaaS) Platform

Dec. 2022 – Aug. 2023

- Designing software architecture and planning of the project.
- Setting up a Kubernetes cluster.
- Developing a recommendation service.

Image-Classification-as-an-API ([Git repo](#))

May. 2023 – Jul. 2023

- CNN-based image classifier.
- GPU sharing and scheduler extender in Kubernetes.
- Developing a Prometheus-based monitoring.

COMPUTER SKILLS

- **Programming Language:** C++, Python, Golang, Bash
 - **Engineering:** MATLAB & Simulink, GNU Radio
 - **SDN/NFV:** Mininet, Open Network Operating System (ONOS)
 - **5G/4G:** OpenAirInterface (OAI), Open5GS, SrsRAN, Magma, Kamailio, O-RAN software components, SD-RAN
-

- **High-Performance Networking:** Vector Packet Processing (VPP), TRex traffic generator, Click Router, Data Plane Development Kit (DPDK), Open vSwitch (OvS)
- **DevOps:** Docker, Kubernetes, Ansible, Grafana, Prometheus, Git
- **Other:** Linux, VMware ESXi, Jira, Confluence

SELECTED COURSES

- Statistical Learning Theory
- Convex Optimization
- Distributed Optimization and Learning (Special topics in control engineering)
- Neural Networks
- Cellular Networks
- Distributed Systems
- Advanced Network Security
- Advanced Programming

LANGUAGE PROFICIENCY

- English (Fluent)
- Persian (Native)