

Mohammad Hossein Shokouhi

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EDUCATION

University of British Columbia

Vancouver, Canada

Doctor of Philosophy in Electrical and Computer Engineering, Communication Systems

2023 - Present

- Supervisor: Dr. Vincent W.S. Wong
- GPA: 94.5/100

Sharif University of Technology

Tehran, Iran

Master of Science in Electrical Engineering, Digital Electronics Systems

2020 - 2023

- Supervisor: Dr. Mohammad Reza Pakravan
- GPA: 18.04/20

Ferdowsi University of Mashhad

Mashhad, Iran

Bachelor of Science in Electrical Engineering, Electronics

2016 - 2020

- GPA: 19.32/20

RESEARCH INTERESTS

- Agentic AI
- Large Language Models (LLMs)
- Deep Reinforcement Learning (DRL)
- Open Radio Access Networks (O-RAN)
- Cell-free Massive MIMO
- Next-generation Wireless Communications Systems

HONORS & AWARDS

- Recipient of the Graduate Student Initiative (GSI) award, University of British Columbia, 2025
- Recipient of the GSI award, University of British Columbia, 2024
- Recipient of the GSI award, University of British Columbia, 2023
- Ranked 1st GPA among all undergraduate students in Electrical Engineering, Ferdowsi University of Mashhad, 2020.
- Received the title of “The Top Student of Engineering Faculty”, Ferdowsi University of Mashhad, 2020.
- Ranked 15th in the final stage of the 24th Electrical Engineering Olympiad, Iran, 2019.
- Received the Sparkling Talent Quota reward from Sharif University of Technology to start master’s studies without the university entrance exam due to exceptional academic performance, Iran, 2020.
- Ranked within the top 0.5% among approximately 160,000 participants in Iranian University Entrance Exam (Konkour) in Mathematics/Physics branch, 2016.
- Received national full scholarship (tuition waiver) for master’s and bachelor’s degrees, Iran.

PUBLICATIONS

- [1] **M. H. Shokouhi** and V. W.S. Wong, “Agentic AI for intent-driven optimization in cell-free O-RAN,” in *IEEE International Conference on Communications (ICC)*, Glasgow, UK, May 2026.
- [2] **M. H. Shokouhi** and V. W.S. Wong, “Distributed precoding for eMBB and URLLC traffic in cell-free O-RAN: A multi-agent reinforcement learning framework,” in *Proceedings of the IEEE International Conference on Communications (ICC)*, Montreal, Canada, Jun. 2025.
- [3] **M. H. Shokouhi**, M. Hadi, and M. R. Pakravan, “Mobility-aware computation offloading for hierarchical mobile edge computing,” *IEEE Transactions on Network and Service Management*, vol. 21, no. 3, pp. 3372–3384, Jun. 2024.
- [4] **M. H. Shokouhi** and V. W.S. Wong, “Large language models for wireless cellular traffic prediction: A multi-timespan approach,” in *Proceedings of the IEEE Global Communications Conference (GLOBECOM)*, Cape Town, South Africa, Dec. 2024.

TEACHING EXPERIENCES

- Computer Communications**, Dr. Vincent W.S. Wong | University of British Columbia *2023 - Present*
Teaching Assistant
- Designed and graded homework assignments and quizzes. Held tutorial classes.
- Data Communication Networks**, Dr. M. R. Pakravan | Sharif University of Technology *Fall 2021*
Teaching Assistant
- Designed and graded homework assignments and projects. Held tutorial classes.
- Linear Control Systems**, Dr. S. K. Hosseini Sani | Ferdowsi University of Mashhad *Fall 2019*
Teaching Assistant
- Held problem solving sessions. Designed and graded homework assignments and quizzes.
- Electromagnetics**, Dr. V. Mohtashami | Ferdowsi University of Mashhad *Fall 2018*
Teaching Assistant
- Held problem solving sessions. Designed and graded homework assignments and quizzes.

RESEARCH EXPERIENCES

- Ph.D. Thesis** | University of British Columbia *2023 - Present*
- Supervisor: Dr. Vincent W.S. Wong
 - Title: Deep Learning for Resource Allocation in Open Radio Access Networks
- M.Sc. Thesis** | Sharif University of Technology *2021 - 2023*
- Supervisor: Dr. Mohammad Reza Pakravan
 - Title: Mobility-Aware Computation Offloading for Hierarchical Mobile Edge Computing
- B.Sc. Final Project** | Ferdowsi University of Mashhad *2019 - 2020*
- Supervisor: Dr. Mehdi Saberi
 - Title: Design and Implementation of a Non-Contact Open Channel Water Flow Measurement System
 - We did this project in collaboration with Control Pardazandeh Company
 - Designed a liquid flow measurement system for open sewage channels

WORK EXPERIENCES

- Wireless Communications Engineer (Internship)** | Rogers Communications Inc. *2025 - Present*
- Project: AI-Enabled Smart Construction over Rogers 5G Network
 - Built an LLM-based AI agent that translates operator prompts into executable subtasks, orchestrates camera operations, performs diagnostics, and generates automated reports.
 - Implemented AI-enabled edge cameras on Raspberry Pi 5 that capture construction-site footage and extract relevant information using object detection and semantic segmentation algorithms. The extracted data is transmitted to a centralized server over the Rogers 5G network.
- Embedded Systems Engineer (Internship)** | Control Pardazandeh Company *Summer 2019*
- Supervisor: Dr. Abbas Ebrahimi-Moghadam
 - Ran FreeRTOS on AT91SAM ARM microcontroller and used its API functions such as task and scheduler functions, queue functions, and semaphore functions to enable multi-tasking on the microcontroller.
 - Used the microcontroller's peripherals such as I2C, SPI and UART to send data to a PLC and also save them on an SD card.

SELECTED PROJECTS

Networks

- Resource management in cell-free massive MIMO using multi-agent reinforcement learning (MARL)
- Design of a multi-timespan approach for wireless cellular traffic prediction using LLMs
- Design and simulation of virtual networks based on SDN using ODL
- LTE link-level simulations with MATLAB
- Development of a BitTorrent file sharing system using Python

Programming

- Development of a smart healthcare monitoring system using Raspberry Pi
- Development of a simple 2D game using C language and Allegro library

Deep Learning

- Design and training of a deep neural network for joint object detection and depth estimation in images

Digital Systems and Microcontrollers

- Design and simulation of a pipelined 4-issue MIPS based processor
- Design and implementation of a pipelined MIPS based processor on FPGA
- Practiced the STM32F103 microcontroller's peripherals such as I2C, SPI and UART through assignments

Electronics

- Design and implementation of a vehicle speed measurement system using Ultrasonic sensors
- Design and implementation of a class-D amplifier

SELECTED COURSES

University of British Columbia

- Deep Learning with Structures, Dr. Renjie Liao
- Convex Optimization, Dr. Vincent W.S. Wong

Sharif University of Technology

- Special Issues in Communications (Software-Defined Mobile Networks), Dr. B. Khalaj and Dr. A. Ravanshid
- Advanced Data Communication Networks, Dr. M. R. Pakravan
- Data Communication Networks, Dr. M. R. Pakravan
- Deep Learning, Dr. E. Fatemizadeh
- Convex Optimization II, Dr. H. Shah-Mansouri
- Parallel Programming and Architectures, Dr. M. Hashemi

Ferdowsi University of Mashhad

- Linear Algebra, Dr. M. R. Akbarzadeh-T
- Microprocessors, Dr. M. Shoraka
- Computer Architecture, Dr. H. Noori
- Advanced Programming (Python) and IOT, Dr. K. Ghiasi Shirazi and Dr. M. Asadi