

Summary and Highlights

Extensive knowledge and experience in performance analysis, resource allocation, and wireless communications. Strong mathematical and problem-solving skills. Highly detail-oriented and persistent. Hands-on experience using programming packages, especially MATLAB. Practical experience in circuit simulation and PCB design using Orcad and Altium Designer. Interested in 5G networks and IoT solutions supported by AI and Machine Learning.

Professional Experience

Concordia University

Montreal, Canada

Research Associate Summer 2019

Research Title: Queueing Analysis of Resource Allocation in Cognitive Radio Networks

Finalizing an IEEE journal paper on the queueing analysis of multi-channel primary users in cognitive radio networks.

Research Assistant 2012 – 2019

Partnered with **Multi-University AVIO-601 Research Project**

University Partners: ETS, Concordia, UQAM, INRS, and Polytechnique

Industry Partners: Thales Canada, TeleSat, ATEM, and Vigilant Global

Project Title: Spectrum Management for Interference Mitigation

Research Title: Performance Analysis of Secondary Users in Cognitive Radio Networks

Proposed a theoretical model to find the probability distribution of the length of the largest available spectrum hole in cognitive radio networks with single-channel primary users - Developed several Markov chain models to investigate the queueing performance of multi-channel primary users in cognitive radio networks (A predictive analysis using probability theory concepts) - Wrote numerous scripts in MATLAB for computing and analyzing the proposed and existing mathematical models - Compared the results predicted by the developed theoretical models with simulation results.

Teaching Assistant 2012 – 2017

Programmer on Duty: Helped students using MATLAB to simulate communication systems, considering different modulation schemes over AWGN and Rayleigh Fading channels with various types of channel coding - **Courses:** Digital Communications - Wireless Communications

Laboratory Instructor: Helped students using oscilloscope and spectrum analyzer to get familiar with AM, FM, and PCM signals in both time and frequency domain - **Course:** Fundamentals of Telecommunication Systems

Marker: Graded the written works of students such as projects, reports, and assignments.

Karizan Telecom.

Tehran, Iran

Telecommunications & Electronics Engineer 2008 – 2011

Project Title: Remote Telemetry

Involved in the production of customer-oriented telemetry devices with the ability of sending status information and receiving remote commands through GSM network. The system hardware includes microcontroller-based motherboard, GSM module, switching mode power supply, and equipped with Java-based mobile software.

Project Title: Site Audit

Collaborated with the team on performing site-auditing for about a thousand of GSM-BTS sites in a joint project with Ericsson for optimizing Tehran's GSM network.

Parscell International

Tehran, Iran

Project Engineer Fall 2005

Worked with a consulting group in a joint project with Nokia for expanding Tehran's GSM network.

Education

Ph.D., Electrical and Computer Engineering

Concordia University, Montreal, Canada 2012 – 2019

Thesis title: Performance Analysis of Secondary Users in Cognitive Radio Networks

<https://spectrum.library.concordia.ca/985211/>

Cumulative GPA: 4.30

M.Sc., Electrical Engineering - Telecommunications

Azad University, Tehran, Iran 2005 – 2008

Thesis title: Performance Improvement of Power Control Algorithm in CDMA Cellular Systems

Ranked 1st in Graduate Program

B.Sc., Electrical Engineering - Telecommunications

Iran University of Science and Technology, Tehran, Iran 1998 – 2003

Project title: Analysis of Analog Voice Privacy System Using Simulation

Publications

1 - S. Khodadadi, D. Qiu, and Y. R. Shayan, "Performance analysis of secondary users in cognitive radio networks with dynamic spectrum allocation," *IEEE Communications Letters*, vol. 22, no. 8, pp. 1684–1687, Aug 2018.

2 - S. Khodadadi, D. Qiu, and Y. R. Shayan, "Analysis of Available Capacity in Multi-Consecutive-Channel Wireless Networks," Prepared for *IEEE Journal Submission*.