Fatemeh Lotfi

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Research Interests

Distributed Learning, Decentralized Decision Making in Multi-Agent Systems, Machine Learning, Deep Reinforcement Learning (DRL), Wireless Communication Systems, Internet of Things (IoT), 5G/6G Networks, Signal Processing

Education

Ph.D., Clemson University, Clemson, SC, USA   **Aug. 2022 - Present**

Electrical and Computer Engineering (ECE), Wireless Communications.
- Dissertation: *Decentralized Decision Making in Multi-Agent Systems.*
- Advisor: Prof. Fatemeh Afghah.

M. Sc., University of Tehran, Tehran, Iran   **Sep. 2010 - Jun 2013**

Electrical and Computer Engineering (ECE), Wireless Communications.
- Thesis: *Efficient Selection of the Best Relay in Dual-Hop Opportunistic Relaying.*
- Advisor: Prof. Amir Masoud Rabiei.

B. Sc., Iran University of Science and Technology, Tehran, Iran   **Sep. 2005 - Jun 2009**

Electrical Engineering, Telecommunication.
- Thesis: *Performance Analysis of N-MSK Modulation in OFDM Systems.*
- Advisor: Prof. Vahid Tabataba Vakili.

Conference Publications

1. H. Rajoli, **F. Lotfi**, A. Atyabi, and F. Afghah. "Triplet Loss-less Center Loss Sampling Strategies in Facial Expression Recognition Scenarios." *Conference on Information Science and Systems (CISS)* , Baltimore, Maryland, March 2023.

2. **F. Lotfi**, O. Semiari, and F. Afghah "Evolutionary Deep Reinforcement Learning for Dynamic Slicing Management in O-RAN", *IEEE Global Communications Workshop Conference (GLOBECOM)*, Rio de Janeiro, Brazil, December 2022.

3. **F. Lotfi**, O. Semiari, and W. Saad, "Semantic-Aware Collaborative Deep Reinforcement Learning Over Wireless Cellular Networks", *IEEE International Conference on Communications (ICC)*, Seoul, South Korea, May 2022.

4. **F. Lotfi** and O. Semiari, "Performance Analysis and Optimization of Uplink Cellular Networks with Flexible Frame Structure", *IEEE 93rd Vehicular Technology Conference (VTC2021-Spring)*, April 2021.

Work Experience

- Research Assistant, University of Colorado (UCCS), CO, USA   Jan. 2021 - Aug. 2022

  Distributed Deep Reinforcement Learning Over Wireless Cellular Networks.
  Performance Analysis and Optimization of Uplink Cellular Networks with Flexible Frame Structure.

- Research And Development Engineer in Sepehr Co., Tehran, Iran   Sep 2013 - Sep 2020

  Analysis and design of digital beamforming.
  Noise cancellation and equalizer design.
  Kalman filter design and estimation of signal parameters.
  New algorithm design for Optical Character Recognition (OCR).
  Analysis of phase and amplitude calibration methods.

- Researcher in Wireless Networks Lab, University of Tehran, Tehran, Iran   Summer 2011

  Investigating methods for network coverage and QoS of WiMax systems.

Contributed Grant Projects	

1. CNS 1941348, "CRII: NeTS: Towards Joint Mobile Broadband and Ultra-Reliable Low-Latency Communications for Connected Autonomous Vehicles", PI O. Semiari, \$197,511, 08/19-04/21.
Role: Research Assistant.

2. CNS 2008646, "Collaborative Research: CNS Core: Small: Extended Reality over Wireless Cellular Networks: Quality-of-Experience Analysis and Optimization", PI O. Semiari, \$270,000, 10/20-09/23.
Role: Research Assistant.

3. CNS 2114283, "Collaborative Research: CNS Core: Small: Hierarchical Federated Learning Over Wireless Edge Networks: Performance Analysis and Optimization", PI O. Semairi, \$234,800, 11/21-10/24.
Role: Research Assistant.

Honours and Awards

- Ranked top %1, in the Nationwide University of Iran Entrance Exam for M.Sc. 2010.
- Ranked top %1, in the Nationwide University of Iran Entrance Exam for B.Sc. 2005.

Teaching Experience

Electrical Circuites I-II,	Azad University	Fall 2012
Signals and Systems,	Azad University	Spring 2012
Communication Systems I,	Azad University	Spring 2012
Electronic Lab I-II,	Iran University of Science and Technology	Fall 2011

Computer Skills

Programming:	Python, MATLAB, C/C++, C#
Machine Learning:	Pytorch, Tensorflow, Keras, Scikit-Learn, Pandas, NumPy
Other Skills and Technologies:	GitHub, Jupyter, Docker, Matplotlib, LaTeX

Selected Graduate Courses

Machine Learning, Deep Learning in Computer Vision, Advanced Digital Communications, Digital Signal Processing (DSP), Cellular Communication Systems, Engineering Probability and Statistics, Adaptive Filters, Coding Theory.

Language Skills

Persian: Native
English: Fluent
Arabic: Familiar