

# Iman Rahmati

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**Research Interests:** Distributed Systems, Mobile Edge Computing (MEC), Multi-Agent Deep Reinforcement Learning (DRL), Federated/Distributed Learning, Performance Evaluation

## EDUCATION

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**MSc. Computer Engineering/Networking**

Sharif University of Technology (SUT)

Graduated Sep 2022, 4/4 GPA

**Thesis Title:** A decentralized resource allocation algorithm utilizing DRL for MEC, aimed at optimizing latency and energy efficiency.

**Supervisor:** Prof. Ali Movaghar [🔗](#)

**BSc. Industrial Engineering**

Khajeh Nasir Toosi University of Technology (KNTU)

Graduated Sep 2019

## ACADEMIC EXPERIENCE

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**Research Engineer at EdgeAI Lab**

2022-Present

Supervisor: Prof. Hamed Shah-Mansouri [🔗](#)

Department of Electrical Engineering, SUT

- **Research Theme:** Developing hierarchical multi-agent DRL-based approaches for computation offloading decision-making in heterogeneous MEC, with an emphasis on centralized training and decentralized execution to achieve collaborative global optimization.

**Research Assistant at Performance and Dependability Lab (PDL)**

2019-2022

Supervisor: Prof. Ali Movaghar

Department of Computer Science and Engineering, SUT

- **Research Theme:** Developing DRL-based algorithms to optimize computation offloading decisions in MEC, with a primary focus on enhancing the quality of experience (QoE) for end-users of mobile applications.

**Teaching Assistant**

- **Performance Evaluation of Computer Systems** (Head TA)

SUT, 2020-2022

Prof. Ali Movaghar and Dr. Mahdi Dolati [🔗](#)

- **Software Defined Networking** (Head TA)

SUT, 2022

Prof. Ali Movaghar and Dr. Mohammad Hosseini [🔗](#)

- **Verification of Reactive Systems**

SUT, 2021

Prof. Ali Movaghar

- **Theory of Machines and Languages** (Head TA)

SUT, 2021

Prof. Ali Movaghar

- **Wireless Networking**

SUT, 2021

Prof. Ali Mohammad Afshin Hemmatyar [🔗](#)

**Sub-Reviewer at 27th International Computer Conference**

CSICC, 2022

Computer Society of Iran (CSICC) [🔗](#)

IEEE website published papers from this conference. [🔗](#)

## PUBLICATION

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- I. Rahmati, H. Shah-Mansouri, A. Movaghar, “QECO: A QoE-Oriented Computation Offloading Algorithm based on Deep Reinforcement Learning for Mobile Edge Computing”, Undergone revision by IEEE Transactions on Network Science and Engineering (TNSE), September. 4. 2024. [🔗](#) [📄](#)
- I. Rahmati, H. Shah-Mansouri, H. Kebriaei, A. Movaghar, “Multi-Agent Deep Reinforcement Learning for Energy-Efficient Cooperative Computation Offloading in Heterogeneous Mobile Edge Computing,” work in progress. [🔗](#)
- I. Rahmati, H. Shah-Mansouri, “Federated Deep Reinforcement Learning Improves Dependent Task Offloading in Mobile Edge Computing”, work in progress. [🔗](#)
- I. Rahmati, “Meta-Reinforcement Learning for Optimized Task Scheduling in Heterogeneous Edge Computing Systems ”, work in progress. [🔗](#)

## HONORS

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- ❖ Ranked in the top 10% of M.Sc. students in the Department of Computer Engineering at SUT, Class of 2019 2022
- ❖ Ranked 55<sup>th</sup> among 60,000 participants in the Nationwide University Entrance Exam of Computer Engineering for M.Sc. in the field of Networking 2019
- ❖ Ranked Top 1% among 180,000 participants in the Nationwide University Entrance Exam for B.Sc. in the field of Mathematics and Physics 2014
- ❖ Achieving the 3<sup>th</sup> position in the RoboCup Competition (IranOpen) 2012

## ACADEMIC PROJECTS

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- **Multi-Agent Deep Deterministic Policy Gradient Networks** EdgeAI, 2023  
Designed based on decentralized partially observable markov decision processes (Dec-POMDP) and employed for computation offloading in heterogeneous MEC.
- **Dueling Double Deep Q-Networks (D3QN)** PDL, 2022  
Designed based on markov decision processes and employed for distributed computation offloading decision-making. [📄](#)
- **Mobile Edge Computing Environment** PDL, 2021  
Modeled and simulated resource-constrained MEC for latency and energy optimization. [📄](#)
- **Long Short Term Memory** PDL, 2021  
Designed and modeled for forecasting edge servers’ workload based on time series analysis.
- **Queueing System** SUT, 2020  
Discrete event simulation and performance evaluation of M/M/1/K queues with various service disciplines. [📄](#)

## SELECTED COURSES

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- Theory of Distributed Systems	4/4	- Wireless Networking	4/4
- Computer Performance Evaluation	4/4	- Computer Network	4/4
- Verification of Reactive Systems	4/4	- IT Enterprise architecture	4/4
- Advanced Network Security	4/4	- Computer Network Management	3.9/4

## SKILLS

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- **General:** Networking, MEC, Multi-Agent DRL, Simulation, Performance Evaluation
- **Programming Languages:** Python, R, Bash, C++
- **Machine Learning:** TensorFlow, PyTorch, Scikit-learn
- **Data Analysis:** Pandas, NumPy, Matplotlib
- **Frameworks & Tools:** Linux, Mininet, Ns-3, Git, L<sup>A</sup>T<sub>E</sub>X, Vim, Flask, Visio
- **Language Proficiency:** Persian (Native), English (Working proficiency)
  - TOEFL (IBT) Score: 108/120 (R: 30, L: 28, S: 22, W: 28)

## CERTIFICATION

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**Interactive Learning** Tehran Institute for Advanced Studies (TeIAS), 2021  
Certification of Completion in Deep Reinforcement Learning Course, Inst: Prof. Majid Nili [↗](#)

**Machine Learning and Deep Learning in Python** Start-Tech Academy, 2020  
Certification of Completion in Udemy Online Course

**Data Science** Tose'e Higher Education Institute, 2019  
Certification of Completion in Data Science Course, Inst: Dr. Yaser Zerehsaz [↗](#)

**Advanced Python Topics** Remis Arjang Institute, 2018  
Certification of Completion in Advanced Python Course, Inst: Dr. Peyman Hooshmandi

**LPIC1** Anisa Iran Linux House, 2017  
Certification of Completion in Linux Administrator Course, Inst: Dr. Amir Abbasi

## REFERENCES

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**Prof. Ali Movaghar** [↗](#) movaghar@sharif.edu  
Professor of Computer Science and Engineering Department, SUT  
Visiting Professor of Computer Science Department, University of Michigan

**Prof. Hamed Shah-Mansouri** [↗](#) hamedsh@sharif.edu  
Assistant Professor of Electrical Engineering Department, SUT

**Prof. Ali Mohammad Afshin Hemmatyar** [↗](#) hemmatyar@sharif.edu  
Professor of Computer Science and Engineering Department, SUT

**Dr. Mahdi Dolati** [↗](#) mdolati@sharif.edu  
Assistant Professor of Computer Science and Engineering Department, SUT

**Dr. Mohammad Hosseini** [↗](#) hosseini@ipm.ir  
Postdoctoral of Institute For Research In Fundamental Sciences Researcher (IPM)

Further information are available upon request.