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Research Interests: Distributed Systems, Mobile Edge Computing, Deep Reinforcement Learning, Federated Learning, Software Defined Networking, Performance Evaluation

EDUCATION

MSc. Computer Software Engineering

Sharif University of Technology (SUT)

Graduated Sep 2022, 17.36/20 GPA (23 units)

Thesis Title: A Novel Resource Allocation Algorithm in Edge Computing with Deep Reinforcement Learning 📄

Supervisor: Prof. Ali Movaghar 📄

BSc. Industrial Engineering

Khajeh Nasir Toosi University of Technology (KNTU)

Graduated Sep 2019

PUBLICATION

I. Rahmati, H. Shah-Mansouri, A. Movaghar, “QOCO: A QoE-Oriented Computation Offloading Algorithm based on Deep Reinforcement Learning for Mobile Edge Computing”, submitted to IEEE Internet of Things Journal 2023. 📄 📄

ACADEMIC EXPERIENCE

Research Assistant

- **Research Assistant at Performance and Dependability Laboratory (PDL)** 📄
Supervisor: Prof. Ali Movaghar SUT, 2020-present
Research Theme: Designed and implemented an algorithm leveraging deep reinforcement learning to optimize computation offloading decisions within mobile edge computing, 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-present
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** SUT, 2021
Prof. Ali Movaghar

HONORS

- ❖ Ranked Top 25% in the Department of Computer Engineering among M.Sc. Students, SUT, Class 2019 Jul 2022
- ❖ Ranked 55th among 30,000 Participants in the Nationwide University Entrance Exam of Computer Engineering for M.Sc. in the Field of Software Engineering Aug 2019
- ❖ Ranked Top 1% among 180,000 Participants in the Nationwide University Entrance Exam for B.Sc. in the Field of Mathematics and Physics Jul 2014
- ❖ Achieving the 1st position in the RoboCup Competition (IranOpen) Mar 2012

ACADEMIC PROJECTS

- **QoE Maximization in Mobile Edge Computing** SUT, 2021
Optimizing Decision-Making for Computation Offloading in Mobile Edge Computing using Deep Reinforcement Learning (Dueling Deep Q-Networks) [🔗](#)
Supervisor: Prof. Ali Movaghar and Dr. Hamed Shah-Mansouri [↗](#)
- **Mobile Edge Computing Environment** SUT, 2021
Modeling and Simulation of Mobile Edge Computing under Resource Constraints for Delay and Energy Optimization [🔗](#)
Supervisor: Prof. Ali Movaghar
- **Time Series Analysis** SUT, 2021
Design a Model for forecasting Edge Server Workload using Recurrent Neural Networks such as Long Short Term Memory [🔗](#)
Supervisor: Prof. Ali Movaghar
- **Computer Performance Evaluation** SUT, 2020
Simulation and Performance Analysis of M/M/1/K Queue Model with Varied Service Orders (FCFS, Processor Sharing, Discriminatory Processor Sharing) [🔗](#)
Supervisor: Prof. Ali Movaghar
- **Distributed Systems** SUT, 2019
A Survey on ‘Verification of Paxos and Raft Protocols in Distributed Consensus’
Supervisor: Dr. Mohammad Izadi [↗](#)
- **Industrial Facilities Planning** KNTU, 2018
Operational Sequence of Activities (Material Flow) and Establishment of Industrial Units in the Process of Gears Manufacturing in an Automaker Company
Supervisor: Dr. Donya Rahmani [↗](#)
- **Project Management and Control** KNTU, 2017
Scheduling, Time management and Resource Allocation in a Construction Project
Supervisor: Dr. Amir Abbas Najafi [↗](#)

SELECTED COURSES

Theory of Distributed Systems
Verification of Reactive Systems
Advanced Computer Networks
Mobile Communications

Computer Performance Evaluation
Wireless Networking
Advanced Network Security
Computer Network Management

SKILLS

- **General:** Networking, Mobile Edge Computing, Deep Reinforcement Learning
- **Programming Languages:** Python, R, Bash, C++, L^AT_EX
- **Machine Learning:** TensorFlow, PyTorch, Scikit-learn
- **Data Analysis:** Pandas, NumPy, Matplotlib
- **Softwares:** Mininet, Ns-3, Git, Vim, Flask, Office, Visio
- **Operating System:** Linux
- **Language Proficiency:** Farsi (Native), English (Working proficiency)
TOEFL (IBT) Score: Awaiting results (to be determined by the 1st of December)

CERTIFICATION

- **Data Science** Tose'e Higher Education Institute, 2018
Certification of Completion in Data Science Course
Instructor: Dr. Yaser Zerehsaz
- **Advanced Python Topics** Remis Arjang Institute, 2018
Certification of Completion in Advanced Python Topics Course
Instructor: Dr. Peyman Hooshmandi Raad
- **LPIC1** Anisa Iran Linux House, 2018
Certification of Completion in Linux Administrator Course
Instructor: Dr. Mohammad Shakeri

REFERENCES

Prof. Ali Movaghar ✉ movaghar@sharif.edu
Professor of Computer Science and Engineering Department, SUT
Visiting Professor of Computer Science Department, University of Michigan

Dr. 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 ✉ mahdidolati@ut.ac.ir
Postdoctoral of Institute For Research In Fundamental Sciences Researcher (IPM)

Dr. Mohammad Hosseini ✉ hosseini@ipm.ir
Postdoctoral of Institute For Research In Fundamental Sciences Researcher (IPM)

Further information and Proofs are available upon Request.