

Erfan Moghadam

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Google Scholar: <https://scholar.google.com/citations?user=pCxzPfQAAAAJ&hl=en&oi=ao>

EDUCATION

Master Degree in Computer Engineering, Kharazmi University, Tehran, Iran Sep 2022-Feb 2026

- Thesis: Providing an Enhanced Clustering Algorithm for Vehicular Ad-hoc Networks, Grade: 20/20
- GPA: 4.00/4.00 | Supervisors: [Dr. Amir Asghari](#) and [Dr. Mohammadreza Binesh Marvasti](#)

Bachelor Degree in Computer Engineering, University of Zanjan, Zanjan, Iran Sep 2017-Sep 2022

- Final Project: Time Series Forecasting with LSTMs for Daily Covid-19 Cases using PyTorch
- GPA: 3.27/4 | Project Supervisor: [Dr. Leila Safari](#)

PUBLICATIONS

1. **E. Moghadam**, S. E. Asghari, S. A. Asghari, M. B. Marvasti, Y. Savaria (Universite de Montreal, Canada), "IMICLiVAN: An Improved Method to Increase Cluster Lifetime in Vehicular Ad Hoc Networks (VANETs), doi:[10.1007/s11227-026-08358-z](https://doi.org/10.1007/s11227-026-08358-z)" Published in SpringerNature, Journal of Supercomputing (Q1 Journal based on Scopus).
2. **E. Moghadam**, M. Kansa, A. Younesi (University of Innsbruck), B. Safaie, "Machine Learning-Driven Load Balancing in Edge and 5G Networks: A Comprehensive Survey, doi: [10.1109/OJCOMS.2026.3728736](https://doi.org/10.1109/OJCOMS.2026.3728736)" Published in IEEE Open Journal of the Communications Society (Q1).
3. **E. Moghadam**, S. Karami, B. Mohammadzadeh, S. A. Asghari, "Zone-Based Cluster Head Selection and Dynamic Clustering Mechanisms in Vehicular Ad-Hoc Networks, Submitted to IEEE Transactions on Intelligent Transportation Systems.
4. P. Afshari, S. A. Asghari, M. A. Tabatabaei, **E. Moghadam**, M. Taghipour "Cluster Stabilization and Cluster Head Oscillation Reduction Protocol for Stable Vehicular Ad Hoc Networks, Submitted to Vehicular Communications.
5. M. Taghipour, S. A. Asghari, Hadi Veisi, **E. Moghadam**, P. Afshari, M. A. Tabatabaei, "A Predictive Clustering Framework for VANETs Using Graph Regularized Deep NMF and Temporal Cluster Head Selection, Manuscript in Final Preparation for Submission to IEEE Transactions on Intelligent Transportation Systems.
6. **E. Moghadam**, M. Kansa, B. Safaie, A. Younesi (University of Innsbruck), "STARC-VANET: Deep Reinforcement Learning for Temporal-Consistency-Aware Multi-Metric Clustering and Cluster-Head Selection, In Progress.
7. **E. Moghadam**, S. Karami, S. A. Asghari, "Improving Road Emergency Prioritization by Modified Zone-Based Cluster Head Selection and Dynamic Clustering Mechanisms in Vehicular Ad-Hoc Networks, In Progress

RESEARCH INTERESTS

- AI in Healthcare
- Vehicular Ad-hoc Networks
- Autonomous Vehicles
- Intelligent Transportation System

RESEARCH EXPERIENCE

Research Assistant, University of Tehran, Full time, Tehran, Iran Feb 2026-Present

- Assisted with study design, protocol development, and research planning for projects in intelligent transportation systems and vehicular networks.
- Implemented technical components and performed data analysis for research experiments.
- Collected, organized, and analyzed simulation data to support ongoing research activities.
- Mentored seminar students under [Dr. Amir Asghari](#)'s supervision, providing research guidance on thesis development, literature review, methodology design, and manuscript preparation for potential journal publication.

TEACHING EXPERIENCE

Teaching Assistant, University of Tehran, Part time, Tehran, Iran Feb 2026-Present

- **Advance Computer Networks**: Collaborated to deliver lectures, grade assignments, designed assignments, and supervised final projects.

- Teaching Assistant, University of Tehran**, Part time, Tehran, Iran Feb 2025-Jun 2025
- **Advance Computer Networks:** Collaborated to deliver lectures, grade assignments, designed assignments, and supervised final projects.
- Lecturer, Amirkabir University of Technology (Tehran Polytechnic)**, Full time, Tehran, Iran Sep 2024-Feb 2025
- **Logic Circuit Laboratory:** Delivered lectures and hands-on training on digital logic circuit design and implementation. Taught Xilinx ISE, Verilog programming, and supervised FPGA-based projects like smart parking systems.
- Teaching Assistant, University of Tehran**, Part time, Tehran, Iran Feb 2024-Jun 2024
- **Advance Computer Networks:** Collaborated to deliver lectures, grade assignments, designed assignments, and supervised final projects.
- Teaching Assistant, Kharazmi University**, Part time, Tehran, Iran Sep 2023-Feb 2024
- **Advance Computer Architecture:** Assisted in teaching advanced computer architecture concepts, supporting students with coursework, assignments, and technical discussions related to processor design, memory hierarchy, pipelining, and parallel computing.
 - **Fault Tolerant Systems:** Collaborated to deliver lectures on fault-tolerant systems and their applications in healthcare and IoT. Provided comprehensive support to ensure students' mastery of fault tolerance concepts and methodologies.
 - **Special Topics in Computer Architecture:** Taught pipeline architecture, single-cycle processors, and advanced system design. Supervised Verilog projects with a focus on practical implementation.
- Teaching Assistant, University of Zanjan**, Part time, Zanjan, Iran Sep 2020-Feb 2021
- **Natural Language and Speech Processing:** Assisted in delivering lectures and guiding students through fundamental concepts of Natural Language Processing. Evaluated assignments and provided technical support for student projects.

SELECTED RESEARCH EXPERIENCE AND ACADEMIC PROJECTS

- Graduate Research and project, Kharazmi University, Tehran Iran**
- **Vehicular Ad-hoc Networks** Nov 2023-April 2025
Duty: Proposed an improved clustering algorithm combining weighted formulas and machine learning to enhance cluster head selection and network lifetime. Conducted simulations using urban mobility models and Python. Supervisor: [Dr. Amir Asghari](#).
 - **Full Scan Design and Test** Sep 2023-Feb 2024
Duty: Converted a CPU adding machine to gate-level format using a netlist generator, then performed scan insertion on it and tested it using a virtual tester. Supervisor: [Dr. Mohammadreza Binesh Marvasti](#).
 - **Car Segmentation with Agglomerative Hierarchical Clustering** Nov 2023-Oct 2023
Duty: Used clustering methods to identify distinctive vehicle clusters, helping manufacturers with decisions on new model supply. Supervisor: [Dr. Amir Asghari](#).
 - **Customer Categorization of a Telecommunications Provider** Nov 2023-Oct 2023
Duty: Worked with logistic regression to predict customer churn using a telecommunications dataset. Supervisor: [Dr. Amir Asghari](#).
 - **Mesh Network on Chip (NoC) Project** Feb 2023-Jun 2023
Duty: Designed a NoC system using VHDL in an FPGA environment. Supervisor: [Dr. Mohammadreza Binesh Marvasti](#).
 - **Single-Cycle and Pipelined MIPS Projects** Sep 2022-Feb 2023
Duty: Designed and simulated MIPS processors using VHDL. Supervisor: [Dr. Mohammadreza Binesh Marvasti](#).
- Undergraduate Research and Projects, University of Zanjan, Zanjan, Iran**
- **Face Recognition Using ML** Feb 2022-Jun 2022
Duty: Built a face recognition system using traditional computer vision techniques.
 - **Patient Response to Drugs** Feb 2022-Jun 2022
Duty: Analyzed drug effectiveness using decision tree classification.
 - **Fuzzy Inference System for Restaurant Tipping** Feb 2022-Jun 2022
Duty: Developed a fuzzy control system for tipping decisions in restaurants.tyui
 - **Software Engineering** Sep 2021-Feb 2022

Duty: Gained familiarity with design patterns. Extracted UML, ER, DFD, flowchart, and Gantt chart diagrams for various case studies, including a shop, hospital, music app, and social media app.

- **Database Project** Sep 2021-Feb 2022
Duty: Designed and implemented a database system for various case studies, culminating in an online pet shop using SQL.
- **Cancer Classification using Support Vector Machine (SVM)** Feb 2021-Jun2021
Duty: Developed an SVM model to classify human cell records into benign or malignant categories.
- **Heart Attack Prediction using Classification** Feb 2021-Jun2021
Duty: Predicted heart attack risks using advanced classification models.

ACADEMIC ACTIVITIES

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- AI in Action Workshop**, Kharazmi University, Tehran, Iran Dec 2024
- Conducted a workshop at Kharazmi University on practical AI applications in smart vehicles, computer vision, and neuroscience. Engaged participants through hands-on sessions focused on real-world problem-solving with AI.

AWARDS AND HONORS

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- Governmental full tuition waiving fellowship, master degree in computer engineering, Kharazmi University of Tehran (Sep 2022-Feb 2026)
 - Achieved top 1% in the Nationwide University Entrance Exam for M.Sc., securing Rank 172 out of approximately 20,000 applicants, 2022, Iran
 - Governmental full tuition waiving fellowship, Bachelor degree in computer engineering, University of Zanjan (Sep 2017-Sep 2021)

ENGLISH LANGUAGE PROFICIENCY

TOEFL IBT- Test Center, Test date: August 09, 2025
Total Score: 80 (Reading: 21, Listening: 17, Speaking: 19, Writing: 23)

SKILLS

Programming Languages: C, C++, Python, Verilog, VHDL, Java, C#
Tools & Frameworks: PyTorch, Scikit-learn, Pandas, NumPy, SQL, Matplotlib, Xilinx ISE, Quartus, ModelSim, .Net, SUMO
Other Skills: Machine Learning, Neural Networks, Digital System Design, Fault-Tolerant System Design, Time Series Analysis, Digital Test and Testable Design

REFERENCES

Dr. Amir Asghari

- Associate Professor, School of Intelligent Systems Engineering, University of Tehran, Tehran, Iran
- Ph.D. in Computer Engineering, Amirkabir University of Technology, Tehran, Iran
- Email: s.a.asghari@ut.ac.ir

Dr. Mohammadreza Binesh Marvasti

- Associate Professor, Department of Electrical and Computer Engineering, Kharazmi University, Tehran, Iran
- Ph.D. in Computer Engineering, McMaster University, Canada
- Email: marvasti@khu.ac.ir

Dr. Abolfazl Younesi

- IEEE Student Member
- Researcher at Distributed and Parallel Systems Group, Department of Computer Science, University of Innsbruck
- Ph.D. in Computer Science, University of Innsbruck, Austria
- Email: Abolfazl.Younesi@ieee.org

Dr. Leila Safari

- Assistant Professor, Department of Electrical and Computer Engineering, University of Zanjan, Zanjan, Iran
- Ph.D. in Computer Science, University of Sydney, Australia
- Email: lsafari@znu.ac.ir