

# Majid Ghasemi

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**Scholar:** Google Scholar

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Research interests      Deep Reinforcement Learning, Ethical Reinforcement Learning, Machine Ethics, Multi-agent Reinforcement Learning, and Social Reinforcement Learning

Education      **University of Waterloo**      Waterloo, ON, Canada

**Ph.D.** in Electrical & Computer Engineering      Sep 2025 – Present  
Supervised by Mark Crowley  
Research area: *Ethical decision making in multi-agent systems and how social learning can be a way to achieve it*

**Wilfrid Laurier University (WLU)**      Waterloo, ON, Canada  
**MASc** in Applied Computing      Sep 2023 – May 2025  
Supervised by Dariush Ebrahimi. *GPA: A+*.  
Thesis title: *Reinforcement Learning for Scheduling and Routing: Electric Vehicles Charging and Patrol Scheduling*

**Imam Khomeini Intl. University (IKIU)**      Qazvin, Iran  
B.Sc. in Software Engineering      Sep 2017 – March 2022  
Supervised by Mahdi Bahaghighat. *GPA: A-*.

Honors and      Winner of the Academic Excellence Gold Medal (WLU)      2025  
scholarships      Int'l Doctoral Student Award (University of Waterloo)      2025 – 2029  
Graduate Scholarship (WLU)      2023 – 2025  
Graduate Fellowship (WLU)      2023 – 2025  
Differential Tuition Fee Waiver (WLU)      2023 – 2025  
Excellence Students Tuition Fee Waiver (IKIU)      2017–2022

Publications      **Optimal and Heuristic Solutions for Efficient Vehicle Patrol Scheduling in Dynamic Urban Safety**  
*Majid Ghasemi, Ebrahim Sarkhouh, Fadi Alzhouri, and Dariush Ebrahimi.*  
*2025 IEEE 34th International Symposium on Industrial Electronics (ISIE).*

**Comparative Analysis of Reinforcement Learning for Reliable Real-Time EV Routing and Charging**  
*Majid Ghasemi, Fadi Alzhouri, and Dariush Ebrahimi.*

*2025 21st International Conference on the Design of Reliable Communication Networks (DRCN).*

**Comprehensive Survey of Reinforcement Learning: From Algorithms to Practical Challenges**

*Majid Ghasemi, Amirhossein Mousavi, and Dariush Ebrahimi.*

*Preprint on Arxiv.*

**Introduction to Reinforcement Learning**

*Majid Ghasemi, and Dariush Ebrahimi.*

*Preprint on Arxiv.*

**Navigating Smart Order Routing in Fixed Income Trading with Linear Programming and Dijkstra's Algorithm**

*Cassel Robson, Marko Misic, Erika Capper, Mila Cvetanovska, Majid Ghasemi, Fadi Alzhouri, and Dariush Ebrahimi.*

*2024 International Conference on the Dynamics of Information Systems.*

**A high-accuracy phishing website detection method based on machine learning**

*Mahdi Bahaghighat, Majid Ghasemi, and Figen Ozen.*

*Journal of Information Security and Applications 77.*

Research experience

**UWECML/CompThink lab**

Supervisor: Prof. Mark Crowley (University of Waterloo) Sep 2025 – Present  
Developing socially informed and ethically grounded approaches to multi-agent reinforcement learning.

**Edge Computing lab**

Supervisor: Dr. Dariush Ebrahimi (WLU) Sep 2023 – May 2025  
Conducted research on reinforcement learning for intelligent transportation systems, focusing on EV fleet management and routing optimization.

**AIST lab**

Supervisor: Dr. Mahdi Bahaghighat (IKIU) Sep Jan. 2021 – March 2022  
Researched on phishing website detection with machine learning.

Teaching experience

**Tutor**

Fall 2025

ECE250: Data Structures & Algorithm

Delivering 1:1 tutoring sessions to students teaching the fundamentals

**Teaching Assistant, Department of Computer Science (WLU)** Winter 2025

CP468: Artificial Intelligence

Guest-lectured select topics; authored/graded quizzes; defined and evaluated term projects; maintained office hours and discussion support.

**Teaching Assistant, Department of Computer Science (WLU)** Fall 2024

CP468: Artificial Intelligence

Facilitated weekly tutorials; prepared assessments; graded assignments/exams; provided 1:1 support on foundational AI methods.

**Teaching Assistant, Department of Computer Science (WLU)** Winter 2024

CP312: Algorithm Design and Analysis

Ran problem-solving sessions; authored quiz questions; evaluated projects and papers; supported students on time/space analysis and classic algorithms.

**Teaching Assistant, Department of Computer Science (WLU)** Winter 2024

CP421: Data Mining

Delivered labs; set and marked quizzes; defined/evaluated course projects; supported students with data prep and model evaluation workflows.

**Teaching Assistant, Department of Computer Science (WLU)** Fall 2023

CP468: Artificial Intelligence

Led tutorials and occasional lectures; created quizzes and project specs; graded assignments/exams; held office hours for core AI topics.

**Teaching Assistant, Department of Computer Engineering (IKIU)** Winter 2022

Fundamentals of Programming

Led labs and tutorials; crafted quizzes and programming assignments; graded submissions and exams; supported students in core programming concepts.

**Teaching Assistant, Department of Computer Engineering (IKIU)** Fall 2021

Artificial Intelligence

Conducted tutorials; designed quizzes and project briefs; graded assignments/exams; provided office-hour support throughout the term.

**Teaching Assistant, Department of Computer Engineering (IKIU)** Fall 2021

Data Mining

Delivered practical sessions; set/marked assessments; defined and evaluated term projects; guided students on end-to-end analytics pipelines.

Industry experience	<b>Gerdoos Software</b> , AI Department	Tehran, Iran
	Junior Data Scientist	June 2022 – June 2023
	Built and maintained SQL pipelines to extract, clean, and aggregate data; performed exploratory analysis and market research to surface trends; and developed baseline ML models for segmentation and forecasting. Partnered with product and marketing to turn insights into decisions, and delivered concise KPI dashboards and reports for stakeholders.	
	<b>Marketing Camp</b> , Software Department	Alborz, Iran
	Frontend Developer	Dec 2018 – May 2019
	As part of the technical team, I helped plan and deliver the Winter Marketing Camp (WinterMC) in February 2019. We built and deployed a web application for participant registration and curated participant profiles, and implemented a real-time, team-based leaderboard that displayed scores and rankings throughout the event.	
	<b>TestHub</b> , Software Department	Alborz, Iran
	Frontend Developer	May 2018 – Nov 2018
	We explored forward-leaning concepts, including applying artificial intelligence to retail recommender systems, while I concurrently developed responsive admin panels and user dashboards using JavaScript, HTML, and CSS.	
Talks and presentations	<b>Optimal and Heuristic Solutions for Efficient Vehicle Patrol Scheduling in Dynamic Urban Safety</b>	June 2025
	2025 IEEE 34th International Symposium on Industrial Electronics (ISIE)	
Skills	<b>Programming</b>	
	Proficient in: Python, JAX, C++, Pytorch, Tensorflow, Javascript, Numpy, Pandas, Matplotlib, and HTML/CSS.	
	<b>Languages</b>	
Mentorship	English (fluent), Persian (native), Azerbaijani (native), and Turkish (intermediate)	
	<b>Academic Mentor</b>	Aug. 2025 – Present
	Offering free 1:1 academic and career mentorship to students. This initiative was started by me to support students from underrepresented backgrounds. Currently mentoring one student	
Grants	<b>HU University of Applied Sciences Utrecht</b>	Aug. 2022 – Aug. 2023

Recipient of a grant to conduct research on Woman, Life, Freedom movement in Iran with computational social science and machine learning approaches.