

# Iman Sharifi

AI, Autonomous Systems Researcher

PhD Student in Mechanical & Aerospace Engineering

The George Washington University, Washington DC, USA

+1 571 302 2783

[iman.sharifi@gmail.com](mailto:iman.sharifi@gmail.com)

[Website](#)

[Linkedin](#)

## SUMMARY

Ph.D. student in Mechanical & Aerospace Engineering at The George Washington University with a perfect GPA (4.0/4.0). Passionate researcher specializing in Neuro-Symbolic AI, Multi-Agent Reinforcement Learning, and Safe Autonomous Systems. Experienced in developing interpretable, safety-critical decision-making frameworks funded by NASA and applied to airspace management. Strong publication record with papers in IJCAI, Smart Agricultural Technology, TRR, and under review at AAAI, and hands-on expertise in Python, PyTorch, and MATLAB.

## EDUCATION

### The George Washington University

Doctor of Philosophy in Mechanical and Aerospace Engineering

Research Areas: *Multi-Agent Reinforcement Learning, Neuro-Symbolic AI, Generative AI*

Sep 2024 – Present

Washington, DC, USA

GPA: 4.0 / 4.0

### Sharif University of Technology

Master of Science in Mechanical Engineering

Research Areas: *Reinforcement Learning, Computer Vision, Robotics, Dynamics & Control*

Sep 2019 – Mar 2022

Tehran, Iran

GPA: 4.0 / 4.0

### K. N. Toosi University of Technology

Bachelor of Science in Aerospace Engineering

Relevant Courses: *Flight Dynamics & Control, Control & Navigation, Automatic Control*

Sep 2015 – Sep 2019

Tehran, Iran

GPA: 3.65 / 4.0

## EXPERIENCE

### Research Assistant

The George Washington University, Intelligent Autonomous Systems Lab (IASL), Washington DC, USA

Sep 2024 – Present

- Developed a **decentralized-centralized training, decentralized execution multi-agent reinforcement learning framework** using an attention mechanism to ensure safe separation among heterogeneous and homogeneous small unmanned aerial systems. This project was funded by **NASA**, and the paper is under preparation for **ITSC**.
- Designed and developed a novel **attention-based neurosymbolic differentiable rule extractor** to learn logical rules on a novel continuous rule space using attention-based conjunction/disjunction operators and a new curriculum learning. This work is under review at **AAAI**.

### Visiting Researcher

University of Surrey, Connected and Automated Vehicles Lab (CAV-Lab), Guildford, UK

Jan 2023 – Dec 2023

- Developed a safe **neuro-symbolic reinforcement learning** framework based on symbolic logic programming for autonomous driving systems, published at **TRR**.
- Developed a **symbolic imitation learning** strategy using inductive logic programming to learn human-like behavioral rules in highway driving. Under review at **Applied Sciences**.

### Research Assistant

Sharif University of Technology, Control Lab, Tehran, Iran

Sep 2019 – Mar 2022

- Developed a novel **self-tuning PID controller using hybrid actor-critic neural networks** for quadcopters. Published at the **ISME** conference.

### Teaching Assistant

Sharif University of Technology, Department of Mechanical Engineering, Tehran, Iran

Sep 2019 – Mar 2022

- Assisted in graduate courses: **Fuzzy Systems & Control, Advanced Applied Mathematics**; and undergraduate courses: **Automatic Control, Differential Equations**.

## PUBLICATIONS

**I. Sharifi**, A. Zongo, B. Wang, P. Wei, "Knowledge-Enhanced Safe Separation of Multi-Agent Unmanned Aerial Systems via Large Language Models," Under preparation for the *International Conference on Machine Learning (ICML)*, 2026.

**I. Sharifi**, H. T. Kim, M. H. Ahmed, M. Ghasemi, P. Wei, "Separation Assurance between Heterogeneous Fleets of Small Unmanned Aerial Systems via Multi-Agent Reinforcement Learning," Ready for submission to the *IEEE International Conference on Intelligent Transportation Systems (ITSC)*, 2026.

**I. Sharifi**, P. Wei, S. Fallah, "ANDRE: An Attention-based Neurosymbolic Differentiable Rule Extractor," Under review at the *Association for Advancement of Artificial Intelligence (AAAI) Conference*, 2025.

**I. Sharifi**, M. Yildirim, S. Fallah, "Symbolic Imitation Learning: From Black-Box to Explainable Driving Policies," Under review at the *Journal of Applied Sciences*, 2025. [[PDF](#)][[Code](#)]

M. Ghazanfari, **I. Sharifi**, A. Taye, P. Wei, G. Biswas, B. Ward, X. Koutsoukos, M. Ghasemi, V. Gupta, A. Chen, A. Shirkhodaei, S. Hasan, I. Amundson, F. Fotiadis, U. Topcu, et al., "A Survey of Security Challenges and Solutions for Advanced Air Mobility and eVTOL Aircraft," Accepted at *AIAA SciTech Forum*, 2026.

**I. Sharifi**, M. Ghazanfari, A. Taye, P. Wei, G. Biswas, B. Ward, X. Koutsoukos, M. Ghasemi, V. Gupta, A. Chen, A. Shirkhodaei, S. Hasan, I. Amundson, F. Fotiadis, U. Topcu, et al., "A Survey of Security Challenges and Solutions for UAS Traffic Management (UTM) and small Unmanned Aerial Systems (sUAS)," Accepted at *AIAA SciTech Forum*, 2026.

K. Acharya, **I. Sharifi**, M. Lad, L. Sun, H. H. Song, "Integrating Neurosymbolic AI in Advanced Air Mobility: A Comprehensive Survey," *Proceedings of the Thirty-Fourth International Joint Conference on Artificial Intelligence (IJCAI)*, 2025. [[PDF](#)]

A. Talaeizadeh, **I. Sharifi**, Shirin Gh. Samani, A. Alasty, "Agricultural Spraying Drones: A Comprehensive Review," *Smart Agricultural Technology*, 2025. [[PDF](#)]

**I. Sharifi**, M. Yildirim, S. Fallah, "Towards Safe Autonomous Driving Policies using a Neuro-Symbolic Deep Reinforcement Learning Approach," *Transportation Research Record (TRR)*, 2025. [[PDF](#)][[Code](#)]

**I. Sharifi**, A. Alasty, "Self-Tuning PID Control via a Hybrid Actor-Critic-Based Neural Structure for Quadcopter Control," *30th Annual International Conference of Iranian Society of Mechanical Engineers (ISME)*, 2022. [[PDF](#)][[Code](#)]

## PEER REVIEWS

---

**Journal Reviews:** Journal of Aerospace Information Systems (2 papers, 2025)

**Conference Reviews:** Association for the Advancement of Artificial Intelligence (AAAI) Conference (4 papers, 2025)

## GRADUATE COURSES (GRADE)

---

Machine Learning (A)	Deep Reinforcement Learning (A)	Large Language Vision Models (In Progress)
Computer Vision (A)	Nonlinear Control (A)	Advanced Mathematics (A)
Advanced Control (A)	Advanced Dynamics (A)	Fuzzy Systems & Control (A)
Control Systems Design (A)	Electro-Mechanical Control Systems (A)	

## TECHNICAL SKILLS

---

<b>Programming</b>	Python, Jupyter Notebook, MATLAB/SIMULINK, Prolog, ProbLog
<b>Libraries</b>	Numpy, Matplotlib, Pandas, Pygame, Scikit-Learn, PyTorch, OpenCV
<b>Tools</b>	GIT, GITHUB, VS-Code, PyCharm, VirtualEnv, Linux Ubuntu, L <sup>A</sup> T <sub>E</sub> X
<b>CAD</b>	SOLIDWORKS

## ACHIEVEMENTS

---

**George Washington University Fellowship** *Fall 2024 – Present*  
Funded by NASA, as part of NASA's University Leadership Initiative (ULI).

**Master's GPA Distinction** *Mar 2022*  
Ranked among the top three graduate students in Dynamics & Control at Sharif University of Technology.

**Bachelor's Thesis Award** *Nov 2019*  
Recognized as the top Bachelor's thesis by the Iranian Aerospace Association.

**National Entrance Exam Distinction** *2015, 2019*  
Ranked among the top 1% of students nationwide in the Iranian Master's and Bachelor's entrance examinations.

## REFERENCES

---

### Dr. Peng Wei

Associate Professor, Department of Mechanical and Aerospace Engineering  
The George Washington University, Washington, DC, USA  
[pwei@gwu.edu](mailto:pwei@gwu.edu)

### Prof. Saber Fallah

Professor, Department of Mechanical Engineering Sciences  
University of Surrey, Guildford, UK  
[s.fallah@surrey.ac.uk](mailto:s.fallah@surrey.ac.uk)