Dr Ali Moltajaei Farid

Senior Robotics, AI & Embedded Systems Engineer
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LinkedIn / Google Scholar / ORCID available upon request

Professional Profile

Senior robotics and AI engineer with 10+ years of experience designing autonomous UAV systems, multi-robot coordination algorithms, and embedded electronics for real-world applications. Proven background in reinforcement learning, embedded systems, PCB design, and product-oriented R&D across aerospace, agriculture, and medical device industries. Experienced in leading industrial–academic collaborations and delivering deployable autonomous systems.

Core Technical Skills

- Autonomous UAV systems, swarm robotics, RL-based control
- Embedded C/C++, ARM, STM32, PIC, Raspberry Pi
- PCB design (Altium, Protel), electronics prototyping
- Python, C++, MATLAB, ROS, Linux
- PyTorch, AI model integration
- UAV platforms: Pixhawk, Ardupilot

Professional Experience

Independent Robotics & AI Consultant 2024–Present

- Designed RL-based UAV guidance and multi-robot coordination systems
- Industry R&D on RF micro-needling medical devices: electronics design, firmware, PCB layout, testing
- Developed monitoring systems and embedded mini-PC platforms for industrial automation

Postdoctoral Researcher (Industry Collaboration), University of Regina, Canada 2021–2023

- Co-developed autonomous multi-UAV weed spraying systems with Precision.ai
- Implemented mapping, coordination, and spraying algorithms used in field trials
- Delivered RL-based control strategies improving coverage efficiency

Postdoctoral Researcher, K. N. Toosi University of Technology 2023–2024

- Designed multi-robot precision agriculture UAV systems

- Reduced spraying waste through intelligent RL planning

R&D Engineer (Medical Devices), Maad Zist Fanavar Beynolmelal 2019–2021

- Electronics, PCB layout, firmware, and safety documentation for medical devices
- Implemented embedded controllers for RF treatment systems

R&D Engineer (Industrial Electronics), Pand Industries 2020–2021

- Designed microcontroller-based weighing and monitoring systems
- Developed next-generation smart industrial devices

Education

PhD in Computer Science – Monash University 2020
MSc in Electronics Engineering – University of Sistan & Baluchestan 2013
BSc in Control Engineering – Qazvin Azad University 2010

Selected Technical Projects

- Autonomous multi-UAV weed detection and spraying system (Canada)
- RL-based quadcopter flight controller
- Smart industrial monitoring and mini-PC systems
- RF micro-needling medical treatment device electronics

Certifications

Reinforcement Learning, Deep Learning, ROS (professional training)

Languages

English (Professional), Persian & Turkish (Native), German & Arabic (Basic)

References

Available upon request