GAREGIN MAZMANYAN

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SUMMARY

AI-driven robotics engineer specializing in vision-language-action pipelines, ROS2 systems, and transformer-based control for autonomous agents. Experienced in real-time drone coordination, multimodal perception-action models, and scalable cloud deployment.

EDUCATION

University of Arizona - M.S. Computer Science — Expected May 2026
University of Arizona - B.S. Computer Science & Minor in SIE — Graduated May 2025

TECHNICAL STACK

AI & ML: Transformers, Deep Learning, Reinforcement Learning, NLP, Computer Vision, SLAM
Frameworks: NumPy, TensorFlow, PyTorch, scikit-learn
Robotics: ROS2, Gazebo, RViz, TF2, OpenCV, Vicon, Quanser, Crazyswarm2,
Systems & Tools: Python, C/C++, C#, Java, JavaScript, Git, Linux, Docker, AWS, CI/CD

EXPERIENCE

Research Assistant - Engineering Robotics Lab | University of Arizona — *02/2025 - Present*

- Integrate affine control with Crazyflie drones in Crazyswarm2, achieving < 1 cm tracking error in swarm experiments.
- Develop neural network models for drones and autonomous vehicles in ROS2, improving control accuracy by 15%.
- Build simulation pipelines in Gazebo with RViz for decentralized coordination and closed-loop testing.

Junior Software Engineer Intern | AEYESAFE | Remote — *10/2024 - 01/2025*

- Designed AWS pipelines to process 500k+ sensor events in a day.
- Reduced deployment time by 50% with automated CI/CD (Docker + YAML).
- Built secure serverless APIs (AWS Lambda + API Gateway) with JWT auth for vision analytics.

Teaching Assistant & Course Coordinator | University of Arizona — *08/2023 - 12/2024*

- Built and deployed a real-time coding platform (csc110-coding-platform.com) for 300+ students.
- Coordinated multi-section course delivery and led lab sessions with applied programming challenges.

PROJECTS

End-to-End Vision-Language-Action Pipeline

- Built a multimodal system mapping images + natural language to robotic actions, achieving a 92% success rate in Q-Car lab trials.

Transformer-Based Sequence-to-Action Model

- Designed a transformer to translate mission instructions into low-level control trajectories.

Drone Swarm Control via Affine Dynamics

- Implemented decentralized ROS2 leader-follower control, achieving < 1 cm tracking error in multi-drone formation experiments.

Crazyswarm2 – Open Source

- Documented & resolved a ROS2 runtime bug, improving reproducibility and community debugging support.

AWARDS & RECOGNITION

- Runner-Up, Amazon AWS Challenge @ Hack Arizona (150+ teams).
- Advanced to Round 3, TCS CodeVita Hackathon (Top 0.05% of 444,000+ participants).
- Awarded $7,000+ in NSF I-Corps & Forge Startup grants.
- Gold Medalist, Arizona State Judo Championships (Seniors & Masters Divisions).