

GAREGIN MAZMANYAN

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EDUCATION

University of Arizona

M.S. Computer Science, (Thesis: Vision-Language-Action Models for Autonomous Driving)

Tucson, AZ

Expected 2026

- GPA: 4.0

B.S. Computer Science (Minor: Systems and Industrial Engineering)

Graduated 2025

- GPA: 3.74

SKILLS

Languages & Tools: C++, Python, JavaScript, SQL, Git, Linux, Bash

Web & Cloud: React, Node.js, Express, PostgreSQL, JWT, Docker, AWS, CI/CD, WebXR, Three.js, Microservices

AI, ML & Systems: PyTorch, CUDA, Computer Vision, NLP, Vision-Language Models (InternVL2), Generative AI

Robotics: ROS2, Quanser, Crazyflie, SLAM, Embedded Systems (Jetson, Pi), Motion Capture, Meta Quest 3

PROFESSIONAL EXPERIENCE

University of Arizona - Engineering Robotics Lab

Tucson, AZ

Graduate Research Assistant (Robotics & AI)

February 2025 - Present

- Engineered a low-latency WebXR-to-ROS2 bridge on Jetson Orin, enabling real-time enhanced spatial awareness VR teleoperation via third-person navigation.
- Fine-tuned and deployed a vision-language-action model for autonomous driving using PyTorch, InternVL2-1B, CUDA, and ROS2, enabling natural language instruction with real-time scene understanding and feedback.
- Conducted experimental validation of decentralized affine transformations on Crazyflie 2.1 drones using ROS2, achieving robust leader-follower coordination with <1 cm tracking error under motion capture and obstacle conditions.

Aeyesafe

Remote

Software Engineer Intern

October 2024 - January 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.

University of Arizona - CS Department

Tucson, AZ

Teaching Assistant & Course Coordinator

August 2023 - December 2024

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

PROJECTS

[Simlingo with Ocar2](#)

Tucson, AZ

PyTorch, ROS2, CUDA, Python, InternVL2

August 2025 - Present

- Built a multimodal control system mapping images + text to robotic actions, achieving a 92% success rate in the Q-Car lab deployment.

[VR-Based Control](#)

Tucson, AZ

VR, ROS2, WebXR, Three.js, Nvidia Jetson, SLAM

May 2025 - September 2025

- Developed a third-person VR teleoperation system for aerial robots using ROS2 and Unity, enhancing spatial awareness and increasing obstacle clearance by 0.20m without compromising task time (published on ResearchGate: 396669983).

[Decentralized Affine Transformation](#)

Tucson, AZ

ROS2, Vicon, Crazyflie 2.1, Control Theory, Multi-Agent Systems

February 2025 - September 2025

- Led the development and experimental validation of a decentralized affine transformation framework for multi-robot formation control, achieving sub-centimeter precision and robust performance under communication delays (published on arXiv:2509.10791).

ACTIVITIES & Awards

Tucson Dojo

Tucson, AZ

Black Belt Judoka, Sensei - Teach and mentor students in Judo fundamentals and discipline; competed at the regional level, earning first place in the Arizona State Championship (2024).

University of Arizona Chess Club

Tucson, AZ

Club Member, University of Arizona Chess Club (Rapid 1944 | Blitz 1830 on Chess.com).

Hack Arizona

Tucson, AZ

Achieved Runner-Up, Amazon AWS Challenge (150+ teams) - built an advanced educational iOS platform using AWS Bedrock, Lambda, and other cloud services with Flutter.

NSF I-Corps & Forge Startup

Tucson, AZ

Presented ML model predicting diabetic glucose spikes; awarded \$7K in grants.