Andrew Krikorian

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Education

University of Michigan, Rackham Graduate School — Ann Arbor, MI
Ph.D. in Robotics, AI/ML — Advised by Professor Jason Corso — *Aug. 2025 – Jun. 2030*

University of California, Riverside — Riverside, CA
B.S. in Data Science, AI/ML — Cum Laude, GPA: 3.84/4.00 — *Aug. 2020 – Dec. 2024*

Experience

Graduate Researcher — Aug. 2025 – Present
University of Michigan, The Corso Group — *Ann Arbor, MI*

- Designing next-generation agent architectures (NTILC) that replace token-level tool calls with learned embedding-based control, improving efficiency and robustness of tool use.
- Developing multimodal medical agents for the ARPA-H VIGIL project, enabling real-time guidance for generalists using vision, language, and tool integration.
- Led evaluation and deployment of agent workflows across simulated clinical environments, supporting 70+ hours of demos, testing, and user studies.

Undergraduate Researcher — Jun. 2024 – Dec. 2024
Fokwa Group, University of California, Riverside — *Riverside, CA*

- Spearheaded an ML-driven materials discovery pipeline using TensorFlow and Scikit-Learn, cutting experimental candidate evaluation time by over 60% through accurate property prediction.
- Identified latent magnetization patterns across high-dimensional inorganic compound datasets, contributing key findings to a peer-reviewed publication on magnetic boride discovery.

Undergraduate Researcher — Jan. 2023 – Jul. 2024
Gallardo Group, University of California, Riverside — *Riverside, CA*

- Achieved 92% prediction accuracy on algebraic geometry benchmarks by developing custom PyTorch neural architectures for polytope area estimation, surpassing prior analytical baselines.
- Built end-to-end preprocessing and model training pipelines for structured mathematical datasets, enabling fully reproducible experiments and supporting a published research paper.

Software Engineer Intern — Jun. 2023 – Sep. 2023
Persistent Systems — *Santa Clara, CA*

- Reduced ETL pipeline runtime by 75% through Python and SQL automation, eliminating manual bottlenecks across mission-critical data workflows.
- Delivered Streamlit analytics dashboards adopted by 500+ daily users, surfacing real-time data quality metrics via integrated Great Expectations validation.

Projects

Monocular Vision-Based Robotic Arm | *TensorFlow, Python, OpenCV, Gym, Gazebo*

- Developed a perception-to-action pipeline enabling a robotic arm to execute precise pick-and-place tasks using a single camera, eliminating the need for depth sensors through a custom CNN policy framework.

Pathfinder: Autonomous Navigation System | *TensorFlow, OpenCV, Python*

- Engineered a real-time autonomous driving system fusing neural object detection with classical computer vision algorithms, achieving 97% navigation accuracy across diverse test environments.

Publications

Fokwa Group | *Machine Learning Applications for Discovering Magnetic Borides*

Gallardo Group | *Predicting Polytope Areas: An Analysis of Accuracy*

Technical Skills

Languages: Python, C/C++, Java, SQL (PostgreSQL), JavaScript, R, HTML/CSS

ML & AI: PyTorch, TensorFlow, Scikit-Learn, NumPy, pandas, Matplotlib, JAX, Hugging Face Transformers, Diffusers, PEFT (LoRA), XGBoost, LightGBM

LLMs & Data: OpenAI API, LangChain, FAISS, Weaviate, Pinecone

Robotics & Vision: OpenCV, ROS/ROS2, OpenAI Gym, Gazebo

Engineering & Cloud: React, Next.js, Flask, FastAPI, Docker, Git, AWS, GCP, Spark, Hadoop, Snowflake, Tableau