Andrew Nguyen

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Robotics researcher focused on legged locomotion, dexterous manipulation, and sim-to-real transfer, with research experience at Michigan and MIT and hardware experience at RAI Institute.

Education

University of Michigan **Aug. 2023 – May 2027**

B.S. in Computer Science & B.S. in Robotics, Engineering Honors Program, GPA: 3.8/4.0 *Ann Arbor, MI*

Coursework: ML, RL, Algorithms for Robotics, Robot Controls, ROS, SLAM & Navigation

Publications

[1] A. Nguyen, M. Li, and D. Bruder, "A high-payload wall-climbing robot using passive bistable suction cups," in *2026 IEEE International Conference on Robotics and Automation (ICRA)*, Vienna, Austria, 2026.

[2] A. Nguyen, Y. Lee, and S. Kim, "Steerable and reactive grasping through modular design with a three-point interface," in *2027 IEEE International Conference on Robotics and Automation (ICRA)*, Seoul, Korea, 2027, Under review.

[3] D. Nguyen, A. Marschner, A. Nguyen, and S. Kim, "Deceptive table tennis using reinforcement learning on contact-implicit mpc," *TBD*, 2026, In prep.

Research & Professional Experience

FREE Lab **Aug. 2023 – Present**

Undergraduate Research Assistant — Onshape, Python, NumPy, ROS, PyBullet, Git *Ann Arbor, MI*

- Developing simulation and control stack for interconnected fixed-wing UAV formations, implementing Circle/Flying-V and waypoint-following controllers
- Designed a passive bistable-suction wall-climbing robot that carried an 8 kg payload on plaster and glass
- First author of an ICRA 2026 paper; inventor on U.S. Provisional Patent Application No. 63/903,627 (2025)

Biomimetic Robotics Lab, MIT **May 2026 – Aug. 2026**

Visiting Student — Python, MuJoCo, NumPy, PyTorch, RL, Git *Cambridge, MA*

- First author of a 2027 ICRA paper (under review) on steerable three-finger grasping; combined geometry-based affordances, reactive reaching, and tactile/proprioceptive RL, with hardware demonstrations on seen and unseen objects
- Implemented 220 Hz YOLO ball localization for a table-tennis robot
- Assited in hardware integration of MPC controller and tuning

ROAHM / ARCAD Lab (Project with Schaeffler) **Sep. 2025 – May 2026**

Robotics Simulation Engineer — Python, MuJoCo, NumPy, PyTorch, RL, ROS, Git *Ann Arbor, MI*

- Integrated actuator dynamics and RL locomotion in MuJoCo; validated against dynamometer data
- Evaluated humanoid tasks using trajectory optimization and whole-body control
- Built hybrid analytical-neural actuator models for nonlinear behavior

RAI Institute (formerly Boston Dynamics AI Institute) **May–Aug. 2024 & 2025**

Hardware Intern — Python, Git, Onshape, Linux, CNC *Cambridge, MA*

- Automated Python motor-dynamometer tests and analyzed friction and torque-velocity behavior to validate actuator builds
- Designed a 1-DOF camera mount and assembled 40 quasi-direct-drive actuators with custom test fixtures

Leadership & Extracurricular

The Brainstormers FTC Team 8644 **2012 – 2023**

Team Captain, Head Robot Designer, Software Lead — Java, Git, Fusion 360, OpenCV *Lexington, MA*

- Earned 2nd place at 2022 FTC Worlds; six-time state champion; globally ranked #1 robot in 2023
- Led software and robot design; mentored 100+ teams

Honors & Awards

Outstanding Presentation Award, Gulf Coast Undergraduate Research Symposium, Rice University — November 2024

University Honors & Dean's List, University of Michigan — 6 semesters

Technical Skills

Languages: C++, Python, C, Java, Julia **Robotics/ML**: ROS, MuJoCo, PyBullet, PyTorch, NumPy, OpenCV
Tools: Git, Linux, CI/CD, Unit Testing, Jupyter **CAD/Fabrication**: Onshape, SolidWorks, Fusion 360, 3D Printing, CNC, Metal Lathe