Jason Zhao

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EDUCATION

University of Maryland College Park | College Park, MD **May 2026**

B.S. in Computer Science, Minors in Statistics | GPA: 3.7/4.0

- **Courses:** Operating Systems, Computer Vision, Advanced Data Structures, Actuarial Mathematics

TECHNICAL SKILLS

Languages: Python, C++, C, Java
Tools and Frameworks: Mujoco, Git, OpenCV, YAML JSON serialization, Docker
Portfolio: https://jasonzhao1553.github.io/Website/

RELEVANT EXPERIENCE

Embodied Robotics Researcher | *Perception Robotics Group* **Jun 2025 - Present**

- Architected end-to-end throwing pipeline for UR10 (IK, trajectory optimization, low-level control), achieving **1.5m** throw distance accuracy within **5 cm**
- Developed system identification framework to calibrate Mujoco simulation against real-world dynamics enabling seamless **sim-to-real** trajectories accelerating development
- Diagnosed hardware constraints (joint speed limits) from sensor data; **translating data to design decisions.**

Software Development Intern | *Runsafe Security* **March 2024 - Feb 2025**

- Built binary-to-report pipeline with x86 gadget parsing and system-call mapping (**ROP** attack risk quantifier)
- Implemented multi-process search algorithm to detect high-risk gadget chains; **identifying software vulnerabilities** which could allow remote code execution
- Re-architected Python prototype in C++, achieving **50×** speedup
- Shipped **Dockerized** customer beta enabling reproducible deployment

PROJECTS

Robotics Perception and Path Planning

- 2nd place (14 teams) in adversarial autonomous navigation competition
- Designed state estimator and end-effector controller for object pickup
- Implemented obstacle avoidance and hallway navigation
- Fused dead reckoning with computer vision for localization

RC Car

- Designed CAD chassis integrating power and control electronics
- Implemented Arduino-based PWM motor control for differential steering
- Developed Bluetooth laptop interface for real-time operation

LeetCode Clone

- Built a full-stack LeetCode-style coding platform that supports problem authoring, submissions, real-time code execution, and automated test case evaluation across multiple programming languages.
- Designed and implemented a secure **Docker-based sandboxing** system to run untrusted user code in isolated containers with strict CPU, memory, network, and time limits