

# 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

**Skills:** Trajectory Optimization, CAD, Soldering

**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**, achieving **1.5m** throw distance accuracy within **5 cm**
- Developed a Python-based system identification that calibrated the MuJoCo simulation to match real-world robot dynamics, **reducing the sim-to-real transfer gap** and accelerating development cycles
- Diagnosed joint-speed-limit constraints from sensor data using Python, then guided redesign of motion profiles, which eliminated overshoot errors and improved trajectory reliability

**Software Development Intern** | *Runsafe Security*

**March 2024 - Feb 2025**

- Delivered exploitability assessment tool that identifies syscalls reachable via ROP chains allowing sales teams to demonstrate measurable reduction in attack surface after hardening.
- Implemented multi-process search algorithm to detect high-risk gadget chains speeding up **search algorithm 10x**
- Re-architected Python prototype in C++, achieving **50x** 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