James Xiao

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EDUCATION

Cornell University   Ithaca, NY

Bachelor's of Science, Computer Science and Mechanical Engineering   *Aug 2024 — May 2028*

- Cumulative GPA: 3.97/4.0
- Relevant Coursework: Data Structures and Functional Programming, Object-Oriented Programming and Data Structures, Leadership and Management, Mathematical Foundations of Computing, Statics, Thermodynamics, Dynamics

EXPERIENCE

Cornell University Autoboat Project Team   October 2024 — Present

LIDAR Project Lead, Controls and Robotics Subteam Engineer   *Ithaca, NY*

- Lead cross-subteam LIDAR integration project using VLP-16 and Point Cloud Library, implementing object detection algorithms, and sensor fusion algorithms to estimate game field state
- Only member on both hardware and software teams concurrently, facilitating cross-team coordination and collaboration
- Coordinate and delegate responsibilities between Perceptions and Controls subteams, driving technical design decisions and coordinating deliverables for LIDAR and computer vision integration
- Create testing protocols for LIDAR integration, validating detection capabilities in simulated maritime environments
- Standardize development environment using Docker and Devcontainers to emulate Jetson Orin NX onboard computer
- Lead design of a low cost, lightweight, 2DOF robotic arm
- Design and validate custom hall-effect encoder module (AS5048A) using Altium Designer and Fusion 360, interfacing via SPI with Raspberry Pi Pico in Rust

Cornell University Naval Reserves Officer Training Corps   August 2021 — May 2024

Marine Option, Midshipman Third Class, Squad Leader   *Ithaca, NY*

- Lead 11-person squad, maintaining full accountability for battalion events and tasks, while mentoring 7 new Midshipmen through successful completion of first semester requirements
- Conduct drill instruction for 25-person platoon, improving drill proficiency through individual coaching and group training
- Serve as Executive Department Head for invitational drill competition, managing $10k budget and coordinating logistics and scoring for 12+ teams and 300+ participants
- Design and facilitated Leadership Reaction Courses for incoming Midshipmen, building assertiveness in decision-making

Language Resource Center   August 2024 — Present

Student Assistant   *Ithaca, NY*

- Provide technical support for multimedia equipment and language learning software
- Facilitated remote and in-person language classes and discussions

PROJECTS

Homelab - Proxmox VE   2021-2024

- Deployed 3-node Proxmox VE cluster using 3 upcycled tower computers
- Designed network segmentation with VLANs, firewall rules, and monitoring using InfluxDB/Grafana stack
- Hosted production services including NAS, Jellyfin media server, and game servers supporting 20+ concurrent users

NixOS   March 2024 — Present

- Developed modular NixOS configurations managing 4+ personal devices with shared base configurations
- Built reproducible development environments using Nix flakes

TECHNICAL STRENGTHS

Computer Languages	Rust, Java, Kotlin, Nix, SQL, OCaml, Python, C++
Systems & Tools	Linux/Unix/Ubuntu, ROS2, NixOS, Docker, Neovim, OpenCV, Proxmox VE
Hardware & Integration	Altium Designer, KiCAD, 3D Printing, Waterjet, Autodesk Fusion, Solidworks

OTHER SKILLS

Languages	Intermediate Spanish, Conversational Mandarin, Beginner Russian, Fluent English
Interests	Linux, Brazilian Jiu-Jitsu, Bouldering, Weightlifting, 3D Printing