ANDREW C. HUIE

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Software engineer with eight years of experience developing complex systems and applications. Strong problem solver specializing in Linux systems and containerized programs. Focused on building resilient, maintainable, and intuitive systems.

TECHNICAL PROFICIENCY

Computer Languages	Python, Rust, Go, Bash, C++, Nix
Development Tools	Pytest, GNU/Linux (Arch & Debian), Git, GitLab Pipelines, Docker, Kubernetes, Nixpkgs

EXPERIENCE

Software Engineer — Jun 2021–Present
Mujin, Inc. — Autonomous industrial robotics solutions — *Koto, Tokyo, JP*

- Led test strategy for customer projects, coordinating cross-team efforts, hardware simulation, and automated validation
- Built test tools for **forensic debugging** & **root cause analysis**, patching hundreds of bugs
- Architected **Pytest** framework to validate controller config migrations, cutting on-site downtime
- Developed live monitoring bot in **Go**, cutting response time across thousands of deployments
  - Created system usage statistics module to enable automated hardware issue support
  - Designed and implemented module to stream controller state info from **GraphQL** over websockets
  - Automated deployment with **GitLab** and **Kubernetes**
- Engineered controller system simulator, enabling company-wide **test-driven development**
  - Automated **QML** UI interaction for validation of on-site operations
  - Emulated warehouse control systems (WCS/**PLC**) in **Python** for integration testing
  - Built threaded control routines simulating complex hardware & robot sequences
  - Developed per-project suites of feature, edge case, and **fault-injection** tests for project deliverables
- Devised and programmed Industrial Task Language (**ITL**) control software for robotic peripherals
- Developed system inspection web app using **ReactJS** & Python
- Prototyped **Nix**-based reproducible builds and development environments, improving DX vs. JHBuild
- Set up and calibrated physical 6-axis robot test cells and successful expo demos

Senior Software Engineer — Sep 2017–May 2021
Ascent Robotics, Inc. — Autonomous robotics technology development — *Shibuya, Tokyo, JP*

- Built autonomous vehicle simulation suite for decision algorithm training and evaluation
  - Developed **Rust**-based **Lanelet2/OpenDrive** map generator to search for high-difficulty test scenarios
  - Emulated perception stack output for agent training in sim environment in **Python**
  - Designed and implemented lightweight collision sim for **MCTS** playout/rollout step in Rust
  - Developed **Unreal Engine 4** driving simulation replicating car platform sensor output
- Conducted screening interviews for hiring candidates during growth phase of startup
- Created data generation pipeline for object recognition in publication:

  Object Detection using Domain Randomization and Generative Adversarial Refinement of Synthetic Images *ArXiv* **2018**

  Fernando Camaro Nogues, **Andrew Huie**, Sakyasingha Dasgupta

EDUCATION

Rice University — *Houston, TX, USA*
Bachelor of Arts in Computer Science, 2016

PUBLIC PROJECTS

scrambler — github.com/achuie/scrambler

Rubik's Cube scrambler, IDA* solver in the works. `$ nix run github:achuie/scrambler -- rand`

website — github.com/achuie/website

Personal website for hobbies and notes. Made with Pollen, a dialect of Racket oriented toward publishing.