

# ANDREW C. HUIE

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*Software engineer with eight years of experience developing complex systems and applications.  
Strong problem solver accustomed to working in Linux environments on containerized programs.  
Focused on developing reliable, maintainable, and intuitive software.*

## EXPERIENCE

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### Software Engineer

Jun 2021–Present

*Mujin, Inc.* — Autonomous industrial robotics solutions

*Koto, Tokyo, JP*

- Developed live controller monitoring bot in **Go**, reducing response time from **~1 day** to **~10 minutes** for 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**
  - Simulated **QML** UI interactions to automate validation for on-site operations
  - Designed and programmed control routines emulating warehouse control systems (**WCS/PLC**) and complex hardware interactions in **Python** for integration testing critical features
  - Created and implemented per-project test suites of feature, corner-case, and **fault-injection** tests
- Devised and programmed Industrial Task Language (**ITL**) control software for peripheral robotic hardware
- Developed system inspection web app using **ReactJS** & Python for **forensic debugging**
- Spearheaded, designed, and implemented **Pytest** framework to validate override- & migration- operations on controller configurations, reducing downtime and debugging in on-site, production deployments
- Evaluated and prototyped **Nix** for better reproducibility compared to 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*

- Developed autonomous vehicle simulation suite for training/evaluating decision-making algorithms
  - **Lanelet2/OpenDrive** map generator for in-house road network format, designed to facilitate searching for difficult scenarios in **Rust**
  - Emulation of perception stack output for agent training in sim environment in **Python**
  - Lightweight collision sim for **MCTS** payout/rollout step in Rust
  - High fidelity driving sim using **Unreal Engine 4** with output similar to car platform
- Conducted screening interviews for hiring candidates
- 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

## TECHNICAL PROFICIENCY

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**Computer Languages** Python, Rust, Go, Bash, C++, Java, Nix, JavaScript

**Development Tools** Pytest, GNU/Linux (Arch & Debian), Git, GitLab, Docker, Kubernetes, Nixpkgs

## EDUCATION

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### Rice University

*Houston, TX, USA*

### Bachelor of Arts in Computer Science, 2016

*Relevant Coursework:* Automata, Formal Languages, and Computability; Computer Game Design; Tools and Models in Data Science; Computer Security; Computer Networks

## PROJECTS

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### scrambler

[github.com/achuie/scrambler](https://github.com/achuie/scrambler)

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

### Cutthroat

[github.com/achuie/cutthroat](https://github.com/achuie/cutthroat)

Networked multiplayer, top-down, ASCII-art shooter video game written in Java.