

# 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

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

## EXPERIENCE

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<b>Software Engineer</b> <i>Mujin, Inc.</i> — Autonomous industrial robotics solutions	Jun 2021–Present <i>Koto, Tokyo, JP</i>
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- 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

<b>Senior Software Engineer</b> <i>Ascent Robotics, Inc.</i> — Autonomous robotics technology development	Sep 2017–May 2021 <i>Shibuya, Tokyo, JP</i>
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- 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

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<b>Rice University</b> <b>Bachelor of Arts in Computer Science, 2016</b>	<i>Houston, TX, USA</i>
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*Relevant Coursework:* Automata, Formal Languages, and Computability; Computer Game Design; Tools and Models in Data Science; Computer Security; Computer Networks

## PUBLIC PROJECTS

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<b>scrambler</b>	<a href="https://github.com/achuie/scrambler">github.com/achuie/scrambler</a>
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Rubik's Cube scrambler, IDA\* solver in the works. `$ nix run github:achuie/scrambler -- rand`

<b>website</b>	<a href="https://github.com:achuie/website">github.com:achuie/website</a>
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