

Jiahong Long

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Skills & Technologies

- Personal, academic, and production experience with `x86` and `arm` assembly, `git`, `go`, `latex`, `bash/zsh`, `matlab`, `c++`, `c`, `python`, `react`, `java`, and `rust`
- Experience with `ROS`, `antlr`, `react`, `redux`, `spring`, `AWS`, and `java/intellij`
- Skilled with `pandas`, `scikit-learn`, `numpy`, `scipy`, and `pytorch` data processing libraries
- Experience with building userspace applications for soft realtime Linux and POSIX environments
- Uses a `arch/i3` ricer environment on a day-to-day basis with custom `vim/emacs` configuration

Education & Coursework

University of California, San Diego / M.S. Computer Engineering

January 2023 - March 2024 (projected), La Jolla, CA

Intelligent Systems, Robotics, and Controls

University of California, San Diego / B.S. Computer Engineering, B.S. Applied Mathematics

GPA 3.9 with honors

September 2019 - June 2023 (projected), La Jolla, CA

- Algebra, (Numerical) Linear Algebra, Real & Complex Analysis, Signal Processing, Statistics
- Language Theory, Compilers, Computer Vision, Discrete Mathematics & Computability Theory

University of California, Berkeley / 2020 Summer Sessions

- Data science and computation, statistical inference, data-driven system modeling (DATA 100)

Experience & Projects

Personal projects

September 2018 - present

- Build and compiler engineering at github.com/achierius/arrow-asm to implement a SPARC inspired assembly-like language with move semantics (`c++`, `starlark`)
- Bringing up a `c++`-based ROS-like middleware with an emphasis on fast lockless shared memory IPC at github.com/valkyrierobotics/wyrd (private)
- Implementing `libc/string.h` functions in `x86` assembly at github.com/achierius/aolc

Cruise Automation / ML + Robotics Engineering Intern, Planning & Controls

May 2022 - August 2022, San Francisco, CA

- Introduced novel error handling practices and consolidated fallback structure for a legacy nonconvex solver within route planning, providing architectural changes to improve developer experience and fault tolerance for autonomous vehicles (`c++`, `ROS`, `starlark`)

Bolt Financial / Software Engineering Intern, Merchant Tools

January 2022 - May 2022, San Francisco, CA

- Migrated decentralised legacy internal developer onboarding flow to a new internal personnel management dashboard, performed various tech debt updates (`goLang`, `k8`, `gorm`, `tsx`)

Amazon / Software Development Engineering Intern, Alexa Smart Properties

June 2021 - September 2021, Seattle, WA

- Built and productionised a customer-facing portal for management of enterprise SaaS products on a `react`, `spring`, and `AWS` based internal software stack, rolling out protected REST endpoints deployed via Cloudformation

Valkyrie Robotics FRC 299 / STEM mentor

October 2017 - present, Cupertino, CA

- Enabling student developers to contribute to a custom ROS-like robotics event loop framework
- Formerly developed and taught a one-week summer camp curriculum to introduce middle school students to robotics and the engineering process; former engineering president