

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

Fall 2022 —, La Jolla, CA

Intelligent Systems, Robotics, and Controls. On leave of absence

University of California, San Diego

B.S. Applied Mathematics, B.S. Computer Engineering (4.00) with honors

September 2019 - June 2023, La Jolla, CA

- Algebra, Numerical, Real & Complex Analysis, Nonlinear Optimisation, Signal Processing, Statistics
- OS, Compilers, Computer Vision, Architecture, Computability Theory

University of California, Berkeley / 2020 Summer Sessions

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

Experience & Projects

Cruise Automation / ML + Robotics Engineer, Maneuver Planning and Simulation

May 2022 - present, San Francisco, CA

- 10x'ed the performance of the internal simulation analysis and metrics framework extensible under a shift to simulation-first stack evaluation (`c++`, `python`, `Ray`, `Spark`, `PoLars`)
- Contributed to open-source data science toolkits to support internal use cases (DuckDB, SQLGlot)
- 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`)
- Built automated accuracy studies for long-lived models to guard against input distribution shift subject to AV data retention constraints (`python`)

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

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 and compile-time message subscription at github.com/valkyrierobotics/wyrd (private)
- Implementing `libc/string.h` functions in `x86` assembly at github.com/achierius/aolc