

# Jason Hong

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## EDUCATION

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### Massachusetts Institute of Technology

Cambridge, MA

*B.S. in Computer Science and Engineering*

*Sept 2025 - May 2028*

- GPA: 5.0/5.0
- Relevant Coursework: Computation Structures, Algorithms, Computational Thinking and Data Science, Fundamentals of Programming
- Activities and societies: Chinese Students and Scholars Association

## EXPERIENCE

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### Durability

Cambridge, MA

*Software Engineer Intern*

*June 2026 - Aug 2026*

- Diagnosed and resolved a **CocoaPods** dependency conflict caused by a partially committed Cordova Pod, unblocking the installation pipeline for the development environment.
- Redesigning the **movement assessment UI/UX** in SwiftUI to deliver clear on-screen instructions across a 7-movement evaluation flow, coordinating state transitions through AppState and MovementAssessmentRunner.

### Kyte Dynamics

Los Angeles, CA

*Software Engineer Intern*

*May 2025 - Sept 2025*

- Researched and implemented Object Request Broker protocols for multi-drone communication.
- Developed embedded C/C++ PX4 drivers using **MAVLink** for low-latency telemetry synchronization.
- Refactored **2,000+** lines of legacy C/C++ into modular abstractions to reduce technical debt.
- Optimized CI/CD pipelines via CMake parameters, **reducing compile times by 50%**.

## RESEARCH

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### MIT Laboratory for Information & Decision Systems

Cambridge, MA

*Undergraduate Researcher (UROP) | Advised by Prof. Tamara Broderick*

*April 2026 - Present*

- Integrating **TextSlinger API** into the **Nomon** simulation framework to support SOTA language models.
- Benchmarking LLM word-prediction performance on selection speed for single-switch interfaces.
- Refactoring probabilistic behavior models to align with modern NLP-driven inference workflows.

## HONORS & AWARDS

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**MIT Pozen Fellowship:** Awarded to select students for excellence in engineering and public service (2026)

**Dr. Sherrie Emoto Mathematics Scholarship:** Highest departmental honor for mathematical achievement at Fullerton College (2025)

## PROJECTS

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### Open Source Contributions | *Lua, Neovim API, Async I/O*

Nov 2025 - Present

- Engineered a **Cursor-style inline editor** for **claude-inline.nvim** using the Neovim API to enable direct buffer prompting.
- Resolved critical **async race conditions** in Lua to ensure seamless cursor control post-AI code generation.
- Extended **opencode.nvim** backend architecture to support **local open-source LLMs**, increasing user privacy and flexibility.

### RISC-V Neural Network Inference Accelerator | *Minispec/BSV, C, RISC-V*

Spring 2026

- Optimized a pipelined processor and MNIST inference stack to placing **top 10; 80×** improvement over baseline.
- Extended the ISA with custom instructions and a pipelined SIMD multiplication to reduce clock period by **51%**
- Reduced clock period **1072ps** → **529ps** by re-encoding ALU branch output as a single comparison bit; implemented a Kogge-Stone adder, specialized iCache, and branch target buffer (BTB) to minimize CPI.

## TECHNICAL SKILLS

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**Languages:** C/C++, Python, Swift, Minispec, Bash

**Tools & Frameworks:** Linux/Unix, Git, Neovim, SwiftUI, Supabase, CMake, MAVLink

**Interests:** Computer Architecture, Verified Software Engineering, OS Kernels, Performance Engineering