

James Ridey

Software Engineer | Performance, Reverse Engineering & Hardware

Sydney, Australia • Australian citizen (E-3 visa eligible) • Seeking relocation to the San Francisco Bay Area
james@ridey.email • +61 415 263 793 • cv.jamesridey.dev • github.com/AeroX2 • linkedin.com/in/james-ridey

Software engineer seeking systems and performance roles involving debugging and hardware integration. Experience at Nullify, Canva, and Google; independent work in C++ inference, CUDA, reverse engineering, and a fabricated CPU.

Technical Skills

Professional: Go, Python, TypeScript, JavaScript, React, AWS.

AI & tooling: C++ inference, RAG interfaces, LLM-assisted development, Playwright, Storybook, ESLint.

Projects: C/C++, CUDA, Verilog, Arduino, ESP32, STM32, PCB design.

Professional Experience

Nullify Product Engineer | AI application security

Mar 2026 – present

- Removed Go startup reflection, cutting Lambda initialisation from **1.9 s to 1.1 s** in a development deployment. Reused a Python subprocess across warm invocations, cutting Python startup overhead from **9.7 s to 50 ms**.
- Shipped a Vite frontend rebuild for the AI security platform, with approximately **470 components** organised into an atomic architecture.
- Directed LLM implementation of ESLint rules enforcing component dependency direction, colour tokens, and shared primitives to keep generated code consistent and reviewable.
- Built opt-in Playwright/Storybook visual checks against each PR's base revision; compared light/dark screenshots with ImageMagick and posted differences in GitHub for review.

Canva Software Engineer

2020 – 2025

- Integrated Magic Design's AI-generated text and selected photos into preset layouts outside the editor. Reused Canva's canvas rendering with editor-team input to display image previews without each design's full DOM.
- Built Team Brain's frontend with a backend engineer: a working RAG prototype answering questions from documents.

Google Software Engineer Intern

2017 – 2019; two summer internships

- Ported Google's Neighbourly app to KaiOS/JioPhone with 512 MB RAM; wrote the first porting specification.

ThoughtDesign Junior Software Engineer

2014 – 2017

Independent Projects & Contributions

Brother Embroidery Cartridge Hardware & software reverse engineering

- Dumped cartridge memory with an Arduino reader; reverse-engineered stitch data through hex and desktop-software analysis. Built a replacement accepted by the machine; published findings and code reused by others.

Minecraft pack.png Seed Search CUDA & GPU profiling

- Used NVIDIA Visual Profiler to find early thread exits in Minecraft's pack.png seed search. Split filtering and tree-position work into separate CUDA kernels: **roughly 2x performance** on my machine. Merged upstream.

JRB8 Computer Digital logic, Verilog & toolchain

- Designed an 8-bit CPU, instruction set, and assembler; tested in simulation and on a Tang Nano 9K FPGA before fabrication through Tiny Tapeout. Built a language, compiler, and browser-based compile-flash-run tool.

OnnxStream & E-paper Art Frame C++ inference & Raspberry Pi

- Added SDXL Turbo support to OnnxStream, adapting tensor dimensions and tiled decoding; fixed tokenisation and VAE scaling bugs. **Five PRs merged upstream.**
- Built a Raspberry Pi e-paper frame that generates images locally every day, integrating inference, a Python service, web controls, and display colour processing.

Security Credentials

Flare-On: Completed all challenges in 2022–2025; **157th / 4,100+** entrants in 2025.

Burp Suite Certified Practitioner (2026) • DEF CON Offensive IoT Exploitation course.

Education

Macquarie University BEng (Honours), Software Design

2016 – 2020