Aayush Bajaj

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Education

University of New South Wales *Sydney, Australia*
Bachelor of Computer Science (AI), Minor Mathematics *Feb 2021 – Sept 2025*

Skills

Languages & Frameworks: Python, Go, JavaScript, TypeScript, Java, C, Node.js, React, Svelte, Flask

Frontend Development: HTML5, CSS3, DOM manipulation, Modern UI/UX

Backend & APIs: RESTful APIs, Authentication (OAuth2/JWT), PostgreSQL, SQL, API Design

DevOps & Cloud: Docker, Nginx, Git, CI/CD, AWS, Azure, Linux/Shell, Systemd, HTTPS/SSL

Testing & Quality: Pytest, Cypress, JUnit, Test-Driven Development, Code Coverage, Automated Testing

Projects

Medical Software WebApp *Alpha-Cure Medical*
Full-stack production medical records system replacing legacy desktop software with modern web architecture.

- Led 5-person cross-functional team to deliver production medical records system, achieving *High Distinction* by architecting Flask/React stack with Azure SQL backend.
- Drove 90%+ test coverage through comprehensive Pytest unit tests and Cypress E2E integration suites, establishing CI/CD pipeline for automated quality gates.
- Containerised application with Docker and implemented Git-based deployment workflow, reducing production deployment time and onboarding friction.

Full-Stack ChatGPT Clone
Production-ready conversational AI application built with modern TypeScript stack and OpenAI integration.

- Architected full-stack chat application using TypeScript 5, Bun runtime, Svelte frontend, and Prisma ORM with PostgreSQL; validated with Zod schemas and Bun's native test runner.
- Implemented security middleware with rate limiting, response caching, and structured logging; integrated OpenAI GPT API with streaming responses and session management.

Build Your Own Git *Codecrafters*
From-scratch Git implementation demonstrating deep understanding of version control internals.

- Implemented core Git plumbing commands in Go including object storage, tree parsing, and commit graph traversal.
- Built pack file parsing and delta compression handling, demonstrating low-level systems programming proficiency.

Bytelocker ([Core](#) | [Neovim](#) | [Emacs](#)) *Opensource*
Cross-editor encryption toolkit with native Neovim and Emacs plugins for seamless file/region encryption.

- Engineered core encryption library in C, then leveraged LLMs to rapidly port functionality to Lua (Neovim) and Elisp (Emacs) plugins.
- Published open-source with comprehensive unit and integration test suites; demonstrated polyglot development and AI-assisted tooling.

[Augmenting Infrastructure](#) *Monorepo*
End-to-end personal knowledge wiki serving 1,073+ pages with zero-downtime deployment pipeline.

- Architected full-stack content platform with Hugo static generation, Emacs org-mode authoring, and bidirectional block-level linking across 493+ interconnected nodes.
- Emphasis on UX, longevity, high quality (TikZ) graphics, beautifully typeset Mathematics and inline code execution with syntax-highlighting.
- Owned complete infrastructure lifecycle including custom Nginx build, automated SSL renewal, systemd orchestration, and Git-based CI/CD on Debian VPS.

Experience

Technical Consultant *Sydney, NSW*
Freelance *2024 – 2025*

- Delivered production web infrastructure for [frizzande.io](#) including static-site generation, dockerised mail server, DNS configuration, and HTTPS with Git-based CI/CD.

Certificates

AWS SAA-C03 *Jan 2026 – Feb 2026*
Amazon Web Services Solutions Architect