

Aayush Bajaj

SOFTWARE ENGINEER

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Education

University of New South Wales

Bachelor of Computer Science (AI), Minor Mathematics

Sydney, Australia

Feb 2021 – Sept 2025

Skills

Languages & Frameworks: Python, Java, C, Go, JavaScript, TypeScript, 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, 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.

- Delivered production-ready medical records system achieving *High Distinction* grade by architecting Flask/React stack with Azure SQL and comprehensive Pytest/Cypress test coverage.
- Reduced deployment complexity by containerising application with Docker and implementing Git-based version control workflow.
- Built complete CRUD functionality supporting patient records, appointments, and clinical data management with secure RESTful API design.

BookBot ↗

Feb 2025 – present

Production chatbot platform with secure authentication, vector search, and real-time processing.

- Enabled semantic search across public-domain books by implementing pgvector-powered PostgreSQL database with OpenAI embeddings using TypeScript/Bun stack.
- Secured platform with OAuth2/JWT authentication supporting persistent sessions, caching, and real-time processing status updates.
- Deployed production chatbot with integrated OpenAI API, comprehensive error handling, and monitoring infrastructure.

Mathematical Tools ↗

Mar 2025 – present

Production-grade RESTful API serving mathematical calculators and converters with static frontend.

- Developed Go backend with efficient algorithms for number theory, statistics, and algebra operations.
- Deployed behind Nginx reverse proxy with systemd service management, HTTPS, and high availability.

Bytelocker ↗

June 2025 – present

Neovim plugin for file/region encryption with seamless editor integration.

- Developed Lua plugin with clean API; implemented buffer manipulation and encryption workflows.
- Published open-source with documentation; demonstrated software design patterns and plugin architecture.

ABAJ.AI Infrastructure ↗

May 2023 – present

Personal web infrastructure serving 1,073+ pages with automated deployment pipeline. Monorepo in Git.

- Scaled personal website to Turing-complete, backlinking wiki with an automated Hugo pipeline supported by Emacs' org-mode.
- Deployed production infrastructure with custom Nginx build, HTTPS/SSL certificates in a Debian VPS

Experience

Technical Consultant

Sydney, NSW

Freelance

2024 – present

- Delivered production web infrastructure for frizzande.io ↗ by configuring a static-site, dockerised mail server, DNS, and HTTPS with Git-based deployment workflow.
- Improved system reliability by implementing comprehensive monitoring, automated backups, and security hardening practices.