

Calvin Kennedy

Full-Stack Developer · Software Engineer · Greater Newcastle Area, Australia

ajax@aquinus.net · portfolio-monorepo-portfolio-ebon.vercel.app · github.com/45ck · LinkedIn

Summary

Full-stack software engineer with professional experience spanning AI agent systems, 3D LiDAR web editors, school management platforms, and internal tooling. Comfortable across the stack—React/TypeScript frontends, Python, C#/.NET, PHP/Laravel, and Node.js backends. Currently completing a Bachelor of Software Engineering (Honours) at the University of Newcastle.

Experience

Work Integrated Learning — Software Engineering

Appaca — Newcastle, NSW

Jan 2025 – Present
Industry Partner Project

- Built the AI agent engine for AppacaChat: Python backend with a StepRunner orchestrator for sequential tool execution and sub-agent delegation
- Designed JSON tool schemas and function-calling so LLMs could invoke internal APIs; implemented depth/cycle protections and guardrails
- Implemented Nuxt.js frontend, wired auth with Supabase, stored state in MongoDB (nuxt-mongoose)
- Shipped evaluation scripts and metrics to compare prompts and models across iterations
- Delivered demo agents: FAQ retrieval, structured form-fill, and basic web research

Software Developer

SDA NNSW Education

Dec 2024 – Present

- Building a multi-tenant web application for a K–12 independent school system across 50+ schools in North NSW
- Delivering full-stack features with a Laravel/PHP backend and React/Tailwind frontend
- Implementing role-based access control, audit trails, and integrations to support school operations

Casual Fullstack Web Developer

Cordel — Newcastle, NSW

Jan 2023 – Nov 2024

- Created UI/UX for web-based 3D point-cloud (LiDAR) editing and modification tools
- Fixed defects across the React frontend and C#/.NET backend
- Migrated numerous legacy Razor (.cshtml) pages to modern React components, reducing tech debt and improving maintainability
- Participated in sprint planning and agile development workflows

Casual ICT Technician & PHP Developer

Macquarie College — Newcastle, NSW

Jul 2021 – Sep 2024

- Sole developer for internal tools: built onboarding and compliance/management systems using PHP, jQuery, Bootstrap/CSS, and PowerShell automation
- Fixed integrations between internal and third-party systems; resolved HTML email rendering issues for marketing
- Provided front-line student service-desk support (devices, accounts, network)
- Troubleshoot Unity3D and Blender issues; assisted VEX Robotics and Arduino projects with debugging

Key Projects

VibeCord — AI-Powered Discord Bot Creator

TypeScript, React, OpenAI Agents SDK, Codex, AWS Fargate, PostgreSQL, Prisma, Terraform

2024 – Present

- Platform for creating Discord bots via natural language; 1,500+ users on the platform
- 4-stage pipeline: Chat UI → Express backend → code artifact (S3) → AWS Fargate deployment
- 2,550+ unit tests, 85%+ coverage, zero TypeScript any types; 62% code reduction via DDD refactor

Macquarie College ICT Platform — Internal Tools Monorepo

Next.js, React, TypeScript, Payload CMS, Prisma, OpenAI, Puck Editor, Tailwind CSS

2024 – Present

- 8 apps and 13 shared packages in a pnpm monorepo: printables studio, RAG chat, visit tracking, device loans, student forms, and more

- RAG-powered AI chat (Vercel AI SDK + OpenAI) with inline citations from 100+ internal docs
- Framework-agnostic RBAC adapter pattern; domain-driven design with Stryker mutation testing enforcing 100% on critical logic

StaffPass — Multi-Campus Management Platform 2022 – 2024
Laravel, React, PHP, TypeScript, Azure AD (SAML SSO), SQL Server, Docker, GitHub Actions

- Multi-tenant platform for student movement passes across school campuses with SAML SSO via Azure AD
- Site-scoped role-based access control and comprehensive audit logging; 80%+ code coverage
- Passed OWASP/NIST security audit; 99.9% uptime in first year of production

Content Machine — Automated Short-Form Video Generator 2024 – Present
TypeScript, Remotion, OpenAI, Whisper, Kokoro TTS, Zod, Vitest

- CLI pipeline: topic → AI script → local TTS → stock footage matching → Remotion render with captions
- 1,400+ tests across 193 files; published on npm; supports 6 video archetypes and 6 caption templates

Education

Bachelor of Software Engineering (Honours) 2022 – 2026
University of Newcastle — NSW, Australia

Technical Skills

AI & Agents	OpenAI APIs, Agents SDK, Codex, Vercel AI SDK, RAG pipelines, tool orchestration, Whisper
Frontend	React, TypeScript, Next.js, Nuxt.js, Astro, Tailwind CSS, Vite, Puck Editor, Remotion
Backend	Node.js, Express, Python, FastAPI, C#/.NET, ASP.NET MVC, PHP, Laravel, Payload CMS, Prisma
Databases	PostgreSQL, MongoDB, SQL Server, Redis
Infrastructure	AWS (Fargate, S3, RDS), Docker, Terraform, Vercel, GitHub Actions
Testing	Vitest, Playwright, pytest, PHPUnit, Stryker mutation testing, Lighthouse CI
Other	Git, pnpm monorepos, domain-driven design, SAML SSO, RBAC, PowerShell, Unity3D

References

Jordan Cordel	Luke Vaughan SDA NNSW Education	Phill Wicks SDA NNSW Education
----------------------	---	--

Contact details available upon request. Additional references available.