

Ali Abbas al-Muhammadi

Full-stack & AI Engineer · Search & Retrieval

ali@alimuhammadi.com · 0451 128 256 · Melbourne, Australia · alimuhammadi.com · github.com/aliabbas-muhammadi

Final-year Monash University IT & Commerce student (graduating 2026) building production-grade search, retrieval, and LLM systems, evaluated rigorously with benchmarked retrieval, grounded generation, and CI-gated quality. Seeking new-grad / intern software & AI roles, Melbourne or remote.

PROJECTS

Shia Library ↗ Search & retrieval platform 2025 – present

Live multilingual search and a grounded, citation-backed "Ask" over ~255k passages, serving real users.

~255k passages, live · 91% answers grounded · 100% abstained out-of-corpus

Crash-safe ingestion and LLM-translation pipeline behind it (220 books, ~90% prompt-cache savings).

Next.js · React · pgvector · OpenAI · Claude · Playwright

Citation-Grounded RAG ↗ AI / retrieval systems 2026

Reference RAG with hybrid retrieval (BM25 + dense + RRF), native verifiable citations, and an abstain path, evaluated.

0.91 recall@5 (hybrid) · 1.00 faithfulness (Claude judge) · 22 question golden set

Next.js · TypeScript · Claude · OpenAI · BM25 + RRF · Vercel

LLM Gateway ↗ AI infrastructure 2026

Provider-agnostic gateway with a proven-correct semantic cache. A two-tier guard holds 1.00 precision at a 0% false-positive rate, CI-gated.

0% false-positive rate · 1.00 cache precision (guarded) · 0.97 recall at 0% FP

Next.js · TypeScript · Claude Haiku · OpenAI · OpenTelemetry

EXPERIENCE

Digital Testing Officer, NAATI Jun 2025 – Present

- Support the delivery of high-stakes online language examinations, triaging connectivity, browser, and platform failures in real time to keep assessments running.
- Mined ticketing data for recurring failure patterns and drove the resulting workflow change; resolved 80%+ of issues at first contact.

Client Engagement Officer (ATO), ProbeCX Jan 2023 – Jun 2025

- Resolved complex technical and account issues across Australian Taxation Office systems while sustaining 95% CSAT over 18 months and mentoring new staff.

SKILLS

LANGUAGES	TypeScript, JavaScript, Python, Java, SQL
FRONTEND	React, Next.js (App Router), Tailwind / MUI
BACKEND & DATA	Node.js, PostgreSQL, Supabase / pgvector, full-text search, row-level security
AI & RETRIEVAL	RAG, hybrid retrieval (BM25 + RRF), embeddings, eval-harness design, Anthropic / OpenAI APIs
INFRA & PRACTICES	Vercel, CI/CD (GitHub Actions), Vitest / Playwright, Git, security headers + secret scanning

EDUCATION

Bachelor of Information Technology & Commerce (Double Degree), Monash University 2023 – 2026

Officer: Monash Association of Coding (marketing) and Computing & Commerce Association (IT).