

Akash Agarwal

Full-Stack & Platform Engineer

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KEY SKILLS

AI / ML

Claude Code & Design, MLFlow, LangChain, Azure OpenAI, Groq, TensorFlow/Keras

Cloud & DevSecOps

GCP (GKE, Cloud Run, IAM, BigQuery, etc.), Azure (Container Apps, AI Foundry), AWS, Kubernetes, Docker, Terraform, Pulumi, Bicep, GitHub Actions

Data

PostgreSQL (pgvector, TimescaleDB, Drizzle), BigQuery, RabbitMQ, Redis, MongoDB

Auth & Security

Auth0, Keycloak (OAuth2/OIDC), Row-Level Security, network sandboxing (nftables, mitmproxy), traffic analysis (Zeek, tshark)

Languages

Bash, Python, TypeScript, JavaScript, Java, Dart, Ruby, C#

Frontend

Flutter, SurveyJS, Next.js, React, Vue, Tailwind, Material UI

Backend

Supabase, Spring Boot, FastAPI, Node.js, Rails

EDUCATION

2019

Master of IT (Professional)

Deakin University, Melbourne
Specialisation in Cyber Security

2016

B.Tech, Computer Science

Lovely Professional University, India
Major in Software Engineering

SUMMARY

Full-stack and platform engineer with 8+ years architecting distributed systems, cloud infrastructure, and AI-integrated applications across GCP, Azure, and on-prem. Owns technical direction end to end, finding the high-leverage path through complex problems and delivering it from planning to production—whether a risk-critical database migration, platform-wide performance work, or a GenAI product shipped solo. Combines deep technical expertise with client-facing communication in research and enterprise settings.

PROFESSIONAL EXPERIENCE

Software Engineer — Applied Artificial Intelligence Initiative (A2I2), Deakin University

Aug 2020 – Present · Melbourne, AU

Serving as Technical Lead across multiple platforms involving cloud infrastructure, distributed backends, and GenAI, as well as the primary contact internally and for Deakin's GCP Subject Matter Expert on DevSecOps.

KEY RESPONSIBILITIES

- Own multi-cloud infrastructure-as-code (Terraform, Pulumi) and observability across multiple GCP projects and 2 billing accounts.
- Contribute agentic skills and CI pipelines for improving development workflows.
- Set team-wide engineering practices: contract testing (Pact), centralised dependency management, CI/CD, code review, and technical documentation.
- Mentor developers across cloud platforms and modern tooling.
- Triage and resolve technical issues across multiple projects and stakeholders.
- Triage and implement full-stack solutions geared towards value creation.
- Act as first point of contact for clients.
- Actively monitor & maintain GKE clusters' and cloud projects' budget health.

KEY ACHIEVEMENTS

- Led an in-place PostgreSQL 11→18 / TimescaleDB upgrade of a ~300 GB production cluster on Kubernetes, cutting downtime **from days to minutes** via a rehearsed, snapshot-based strategy.
- Sole-engineered (as the primary client liaison) a clinical survey platform (Next.js, SurveyJS, Drizzle, Azure AI Foundry) **in 6 weeks** for an overseas conference, translating a 1800+ psychological assessment questionnaire into a GenAI-integrated product with the BlackDog Institute.
- Led multiple **zero-downtime** Spring Boot 2.2→3.x migrations for micro-services platform serving thousands of research participants; added

INTERESTS

Home-lab & self-hosting, network security tinkering, open-source contribution, archery and fitness.

GraalVM native-image support with a benchmarking harness.

- Built a hardened, network-isolated sandbox (Docker, non-root, nftables egress control, mitmproxy TLS interception) to safely audit outbound traffic of untrusted third-party tooling.
- Migrated cluster auth to Workload Identity Federation, eliminating static service-account keys; cut Kubernetes hosting costs via custom capacity-analysis tooling.
- Budgeted technical infrastructure for **5+ research grant applications**, evolving the process for improved forecasting reliability.

Software Engineer — Deakin Launchpad, Deakin University

Mar 2019 – Jun 2020 · Melbourne, AU

Engineering and product ownership across client projects (React, Hapi, PostgreSQL/MySQL, MongoDB, Redis, Socket.io); primary technical liaison for multiple stakeholders under Agile delivery.

KEY ACHIEVEMENTS

- Built a health-reporting system on Hapi integrating the REDCap API; designed a 4NF schema and **migrated ~19K records** via parallel batch processing.
- Engineered a containerised Ruby service (Overseer) to execute and evaluate untrusted student code within the OnTrack LMS, with a shared Ruby gem and RabbitMQ integration.
- Established standards for secure, maintainable deployments using Docker Swarm and docker-compose.

Casual Academic — Deakin University

Mar 2019 – Jun 2020 · Melbourne, AU

Tutored Object-Oriented Programming (C#), Data Structures & Algorithms, and IoT Software Architecture (AWS, IBM Cloud).

Software Engineer Intern — Deakin University

Nov 2018 – Feb 2019 · Melbourne, AU

Built React frontends and Hapi/MongoDB backends; ran Agile spikes and authored UML technical documentation.

Freelance Software Developer

Jul 2016 – Jan 2018 · India

Built mobile apps (Qt, Android) with Node.js and Ruby on Rails backends; deployed WordPress solutions with optimised Nginx configurations across connected VPS instances.

References available upon request.