

Gabriel Isaías Padua Carvalho

SOFTWARE · DEVOPS · AI ENGINEER

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PROFILE

Software, DevOps and AI Engineer who ships production systems end to end — from AWS infrastructure and CI/CD to LLM-powered products. Sole engineer on a multi-server financial-services CRM estate: two production server migrations, estate-wide security hardening and incident response, and multiple production AI systems (voice, WhatsApp, ticket triage). **PhD candidate in adaptive, agentic multi-agent AI and first-author IEEE Access publication**, ACS-assessed for Software Engineer, Developer Programmer and DevOps Engineer. Full Australian working rights (HDR student visa to 2029); open to Melbourne relocation.

SKILLS

Languages	Python · PHP · TypeScript / JavaScript · SQL · Bash · C / C++
Cloud & Infrastructure	AWS (EC2, S3, Lambda, DynamoDB, API Gateway, CloudFront, WAF, ACM, Route 53, IAM, SES, Bedrock, EBS/DLM, GuardDuty) · Azure (AKS, Bicep) · Cloudflare (Tunnel, WAF, DNS) · Linux (Ubuntu, AlmaLinux, cPanel/WHM)
DevOps & Platform	Docker · Kubernetes (k3s, AKS) · Terraform · Bicep · CI/CD & git-driven deploys · observability & monitoring (CloudWatch, UptimeRobot) · WireGuard · Tailscale · systemd
AI & ML	LLM production systems (Bedrock/Claude, GPT-4o-mini, Deepgram, Retell) · prompt & conversation-flow engineering · agentic & multi-agent systems · RAG · MLOps · model evaluation, guardrails & XAI · PyTorch · TensorFlow · Hugging Face · CNN / U-Net · Transformers
Data	PostgreSQL / Supabase · MySQL · DynamoDB · REST APIs · ETL pipelines · pandas / NumPy
Practices	TDD (pytest, Vitest, Playwright, axe) · IaC · DevSecOps & security hardening · incident response & RCA · functional-core architecture · technical writing

EXPERIENCE

WealthGoal Software (formerly part of JDL Strategies) — **Software & DevOps Engineer** Dec 2024 – Present

- Shipped a production **voice-AI qualification agent** — from a self-built AWS Bedrock (Nova Sonic) + Twilio prototype to a managed Retell platform — replacing the vendor's extraction with a **PHP + GPT-4o-mini pipeline, live September 2025**.
- Built and deployed a standalone multi-tenant **Django support portal** (Python 3.12, Supabase, AI-assisted ticket triage) as sole engineer — **604 automated tests** and live client workspaces on a functional-core architecture.
- Delivered a production **WhatsApp financial-qualification chatbot** (FastAPI + GPT-4o-mini, 25-step conversation engine) in **three days**, with idempotent HMAC-validated webhooks, atomic opt-out compliance and a single-call prompt design that **cut response latency ~50%**.
- Migrated two production servers to new AWS accounts with row-parity-verified database cutovers, and executed the corporate infrastructure separation of the two companies — vhosts, three Cloudflare zones and registrar EPP domain transfers.
- Owned the AWS environment — WAF, three CloudFront distributions, ACM, GuardDuty and IAM — **decommissioned a legacy stack saving ~US\$18k/year**, and rebuilt backups on EBS/DLM snapshots after finding the prior policy silently capturing none.
- Led estate-wide security hardening and incident response — a CSRF/SSRF/security-headers sprint across three servers (five adversarial QA rounds), a same-day SQL-injection scanner response, and an authorisation-gate content leak fixed across **163 files / 422 sites** — alongside cPanel/WHM/Imunify360 and Exim/SES mail operations.

Griffith University — **Casual Academic** 2024 – Present

- Teach across Object-Oriented Software Development, Mobile App Development and penetration-testing / ethical-hacking courses; lead tutorials and lab sessions.

SELECTED PROJECTS

gipc.dev — self-hosted operator platform 2026 — Live-demo platform on bare-metal **k3s** behind a **Cloudflare Tunnel** (zero inbound ports), infrastructure-as-code in-repo; migrated the full domain + mail estate solo.

Nina Nails — booking platform (client) 2026 — Full-stack **Next.js 15 / React 19 / Supabase** product on Vercel (~15k LOC) with a three-tier test suite (Vitest, Playwright e2e, axe) and Google Calendar + email integration.

Seismic inversion (PyTorch U-Net) 2026 — Reproducible **U-Net (12.5M parameters)** inverting 2,000 synthetic seismograms via a differentiable wave simulation; functional-core design, 27 deterministic tests.

Transformer financial-prediction platform 2023–2024 — Node.js + Python on Azure Kubernetes; ETL of **3M+ records/day**, **sub-200 ms per query**, **~12% MAE reduction**, IaC (Bicep/Terraform), >90% coverage.

Real-time drowning detection (Griffith x Huizhou) 2024–2026 — Edge computer-vision on Raspberry Pi/ARM at **≥20 fps and 95%+ accuracy**, with sub-100 ms multi-sensor fusion; published in **IEEE Access**.

PUBLICATIONS

G. I. P. Carvalho et al., “Artificial Intelligence for Drowning Detection: Technical Feasibility Established, Operational Viability Unproven,” *IEEE Access*, vol. 14, pp. 97,604–97,628, Jan. 2026. DOI: 10.1109/ACCESS.2026.3701060.

EDUCATION

PhD, Computer Science — Griffith University 2025 – 2028 (expected)
Adaptive, self-reconfiguring multi-agent AI for real-time decision-making; confirmation milestone passed April 2026.
Supervisors: Dr Larry Wen, Dr Qinyi Li.

Master of Information Technology — Griffith University 2024
High Distinction, GPA 6.63 / 7.0; Griffith Award for Academic Excellence (2023 & 2024).

Bachelor of Laws (LLB) — Universidade Federal do Paraná, Brazil 2018
High Distinction.

CERTIFICATIONS & RECOGNITION

- **ACS Skills Assessment (2026)** — assessed suitable for Software Engineer (261313), Developer Programmer (261312) and DevOps Engineer (261316).
- **IELTS Academic — Overall 8.0** (Listening 9.0), CEFR C1 (2025).
- **ICPC 2024** — 3rd place, South Pacific regional, Level B division.
- **Research fellowship**, Xidian University (Guangzhou), 2025 — AI, Big Data & Embedded Systems.

LEADERSHIP & COMMUNITY

- **Griffith Coding Club** — led weekly data-structures & algorithms workshops and ICPC team labs.
- **Griffith AI Research Colloquium (2026)** — presented early PhD findings on adaptive multi-agent systems.
- **Research seed-funding** — contributed the partner-engagement workstream to a 2026 Griffith research-funding bid.