

SAKCHOTE KHEMMARACH

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SUMMARY

Backend developer specializing in scalable, fault-tolerant systems and high-throughput API design. Led backend development of a production AI grading platform, reducing manual evaluation by 50% and co-authoring an IEEE-published paper on adaptive AI scoring. Built and maintained a hybrid Kubernetes cluster with 99.9% uptime spanning on-premise and cloud nodes. Passionate about distributed systems, CI/CD automation, and building services that handle millions of requests reliably. Portfolio and project deep-dives at sakchote.com.

WORK EXPERIENCE

Backend Developer (Lead) — Ezzay Platform Aug 2024 – Present
Chulalongkorn University (CULI x Engineering), Bangkok, Thailand

Led backend architecture for an AI-powered exam grading platform serving university educators. Engineered RESTful APIs with JWT auth and RBAC. Built end-to-end pipeline: PDF upload, OCR via GPT-4o vision, rubric-based scoring across four dimensions, and report generation. Implemented async job processing with retry logic and exponential backoff. Integrated pgvector for semantic search with HNSW-indexed embeddings. Deployed on AWS using Docker Compose, Nginx, and Terraform IaC. Automated CI/CD with GitHub Actions. Reduced manual grading by 50%.

Tech: Python, FastAPI, PostgreSQL, pgvector, OpenAI API, Docker, AWS S3, Terraform, Nginx, GitHub Actions

EDUCATION

Chulalongkorn University Jan 2024 – Present
B.Eng. Electrical Engineering (Communication Engineering)

SKILLS

Languages: Go, Python, TypeScript, Java, C/C++, SQL
Frameworks: FastAPI, Gin, React, Next.js
Databases: PostgreSQL, MongoDB, Redis, pgvector
Cloud & Infrastructure: Kubernetes, Docker, AWS, Terraform, Ansible, Nginx, Traefik, Proxmox
DevOps & CI/CD: Git, GitHub Actions, ArgoCD, GitOps, Docker Compose

PROJECTS

Hybrid Edge Kubernetes Cluster

Built a production-grade K3s cluster spanning a local Proxmox hypervisor and AWS EC2 edge node over a zero-trust Tailscale mesh with zero open inbound ports. All traffic routed via Cloudflare Tunnel. Full infrastructure-as-code with Terraform and Ansible. Implemented GitOps with ArgoCD and node labeling for workload scheduling. Maintains **99.9% uptime** hosting sakchote.com in production.

Tech: K3s, Terraform, Ansible, Tailscale, Cloudflare Tunnel, Traefik, ArgoCD, Proxmox, AWS EC2

Choudai (C2C E-Commerce Platform)

Developed backend for a C2C marketplace with a custom escrow payment system to prevent fraud. Built microservices for JWT authentication, product search with filtering, real-time chat, and order management.

Tech: Go, Gin, PostgreSQL, Docker, Redis

Caremate (AI Healthcare Assistant)

Designed an AI healthcare backend automating medical diagnosis and standardizing clinical coding (ICD-10). Integrated NLP models for symptom analysis and diagnosis prediction.

Tech: Python, FastAPI, MongoDB, OpenAI API

AWARDS

Paper Presentation & Student Travel Grant — IEEE TALE 2025 — IEEE Dec 2025
Co-authored “Adaptive Prompt-Based AES” on AI-driven essay scoring; presented at international conference in Macau.

1st Runner Up — AI Thailand Hackathon 2024 EP2 — NECTEC Nov 2024
AI exam generator from course PDFs with Elo-based adaptive difficulty; 36-hour build, 28 finalist teams.

Top 10 Finalist — Thailand Cyber Top Talent 2025 — NCSA Aug 2025
Web exploitation and cryptography; national-scale competition.

2nd Runner Up — MEDCHIC Health Data Hackathon 2024 — Chiang Mai University Mar 2024
50-class kidney disease classifier (95% top-5 accuracy) on MIMIC-IV data; RAG-based QA for clinicians.