

## SUMMARY

Senior Backend Engineer with 6 years building highly-available, scalable cloud systems processing millions of daily transactions. Grew from individual contributor to technical owner of 4 microservices. Led architecture design for 10+ Technical Designs across microservices, ML systems, and real-time pipelines. Highly adaptive to emerging technologies (AI agents, LLMs, modern tooling). AWS Certified Solutions Architect. Active technical blogger at cuongkane.com.

## EXPERIENCE

- Parcel Perform** Ho Chi Minh City, Vietnam  
*Aug 2024 - Present*

*Senior Backend Engineer*

  - **System Architecture & Design:** Directed architecture for 10+ systems including ML and real-time pipelines; authored cross-team Technical Design for carrier identification spanning 7 microservices, approved by CTO.
  - **Microservices & Database Splitting:** Engineered decomposition of 2 monoliths into microservices with zero-downtime database splitting, enhancing modularity and enabling autonomous team deployments.
  - **High-Availability Cloud Systems:** Architected mission-critical Analytics platform (ClickHouse/Dagster) using DDD; accelerated dashboard chart loading by implementing static file caching strategies.
  - **Real-Time Data Pipelines:** Optimized ML-based carrier identification pipeline processing millions of daily events across 7 microservices; increased parcel found rate by seamlessly integrating ML models with legacy regex flows.
  - **AI/ML Solutions:** Built L3 AI agents using LangChain/ReAct and AWS Bedrock; reduced LLM costs by 20% via strategic model selection while automating Root Cause Analysis workflows.
  - **Engineering Excellence:** Delivered 105+ tickets with 100% on-time record as sole backend engineer; pioneered company-wide adoption of AI-assisted Technical Design workflows.
  - **Release & Deployment Strategy:** Achieved zero-downtime releases by establishing canary deployment protocols, A/B testing, and mandatory QA gates for all production changes.
  - **Observability & Sustainable Growth:** Enhanced system reliability by implementing Grafana dashboards for P95/P99 latencies and Kafka lag, enabling data-driven capacity planning and proactive debugging.
  - **Mentorship & Knowledge Sharing:** Mentored 2 engineers to promotion-readiness and fostered learning culture by delivering 15+ technical sessions on System Design, AI/LangChain, and Flink.
  - **Engineering Leadership:** Strengthened engineering standards by establishing incident response runbooks, enforcing PEP8/TDD practices, and conducting 6+ technical interviews.
  
- Parcel Perform** Ho Chi Minh City, Vietnam  
*Jul 2022 - Aug 2024*

*Backend Engineer*

  - **Scalable API Development:** Launched Public Booking API for multi-carrier integrations (DHL, Shippo); implemented S3 pre-signed URLs and Celery-based rate limiting to protect third-party resources.
  - **Extensible Integration Architecture:** Designed extensible integration framework supporting 50+ carriers; validated requirements through usage testing to ensure scalability for future logistics partners.
  - **High-Volume Data Pipelines:** Scaled data pipeline to process 5M+ daily events with sub-second latency for mission-critical tracking using Apache Flink and optimized microservices.
  - **Cross-Functional Collaboration:** Aligned cross-functional teams by authoring 4+ Technical Designs using Domain-Driven Design (DDD) principles to define clear boundaries and deliverables.
  - **Email Extraction Platform:** Engineered high-throughput email extraction engine using Kafka CDC; system has processed shipment notifications reliably in production for 3+ years.
  - **Architectural Decision Records:** Standardized architectural decision records (ADR); evaluated 4 approaches for email processing to ensure long-term team alignment on technical strategy.
  - **Sync-to-Async Reliability Pattern:** Ensured booking reliability by architecting a sync-to-async fallback pattern across 5 microservices using Kafka to handle component failures.
  - **Celery Pipeline Architecture:** Accelerated data processing by parallelizing 8K+ postal code tasks using optimized Celery canvas patterns (chain/chord) and worker configurations.
  - **System Reliability & Incident Response:** Restored 1.5M records during critical incidents within 24 hours by developing custom recovery scripts and resolving Redis cluster hotspots under 10x traffic load.

- **Large-Scale Data Migrations:** Secured data consistency during large-scale migrations by implementing incremental update patterns, optimizing SQL indexing, and managing autovacuum constraints.
- **Testing & Developer Experience:** Reduced onboarding time for 5 engineers by defining company-wide testing standards (AAA pattern) and driving adoption of modern tooling (Poetry, Ruff).

### • Cinnamon AI Labs

*Software Engineer*

Ho Chi Minh City, Vietnam

Aug 2020 - Jul 2022

- **Enterprise Client Delivery:** Deployed enterprise-grade document processing systems for 4 Fortune 500 clients (Deloitte, Bridgestone), directly driving client success in AI automation.
- **Multi-Framework Backend Development:** Developed versatile backend solutions using Flask, FastAPI, and Django, strictly adhering to SOLID principles and Repository patterns.
- **Multi-Cloud Infrastructure:** Managed multi-cloud infrastructure (AWS, Azure, GCP) and containerized applications with Docker to ensure consistent cross-cloud deployments.
- **ML-to-Production Pipeline:** Bridged gap between research and production by converting experimental ML models into scalable, SLA-compliant API services.

## PROJECTS

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- **Codlis - AI Code Visualization (Master's Thesis, H2 2025) ([codlis.com](#)):** Architected multi-agent LLM system for interactive code comprehension using LangChain and Knowledge Graphs. Validated effectiveness via user study showing 2.9x higher task success rate and 29% cognitive load reduction (pj.001).
- **SweatCharge - Sports Club Management (H1 2025) ([sweatcharge.com](#)):** Developed full-stack sports management platform with role-based SSO and automated billing; currently servicing active production users. Implemented fuzzy matching algorithms for player association using React/TypeScript.
- **Hasiti - AI Hairstyle Simulator (Bachelor's Thesis, 2021):** Built real-time hairstyle simulation app using fine-tuned CNNs for style transfer. Architected full-stack solution connecting React Native mobile client with Python/Flask AI inference backend.

## CERTIFICATIONS

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- **AWS Certified Solutions Architect - Associate:** Amazon Web Services (Valid: Jan 2025 – Jan 2028)

## EDUCATION

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- **Master of Science in Computer Science** Sept. 2021 – Sept. 2025  
*HCM University of Science* Ho Chi Minh City, Vietnam
  - **Research Focus:** AI/ML, Big Data, and Human-Computer Interaction under post-doctoral supervision. Applied analytical experimentation methods for metric-driven evaluation.
- **Honor Program - Bachelor of Science in Information Technology** Sept. 2017 – Sept. 2021  
*HCM University of Science* Ho Chi Minh City, Vietnam
  - **Selective Program:** Top 70 students selected from 1,000+ candidates. Comprehensive curriculum spanning web/mobile development, computer vision, image processing, software engineering, and scientific research methods.
  - **Technical Foundation:** Developed strong fundamentals in algorithms, data structures, OOP principles, and hardware/software architecture through rigorous coursework.
- **Machine Learning Course (Facebook-sponsored)** Aug. 2019 – Dec. 2019  
*Coder School* Ho Chi Minh City, Vietnam

## AWARDS & RECOGNITION

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- **Parcel Perform (2022-Present):** Member of the Month (3x), Best Presentation Award, AVA AI Award for AI adoption, Professional Style Award.
- **Cinnamon AI Labs (2020-2022):** Employee Recognition Award for outstanding technical contributions.
- **Faculty of IT Academic Excellence (2018):** Top 10 students with highest GPA (9.1/10) among 1,000+ students.

## TECHNICAL SKILLS

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- **Architecture:** High-Availability Systems, Microservices, DDD, System Design, RESTful APIs, TDD, Idempotency, Outbox Pattern, Feature Toggles, SSO/OAuth
- **Big Data & Pipeline:** Apache Flink, Kafka, Celery (canvas: chain/chord/group), Dagster, RabbitMQ
- **Infrastructure & Observability:** AWS (EC2, S3, Bedrock), Docker, Grafana, Sentry, Alerting Systems, CI/CD
- **AI/ML:** LangChain, LangGraph, LangSmith, AI Agents, Prompt Engineering
- **Languages:** Python, Scala, Java, TypeScript, SQL
- **Databases & Data Stores:** PostgreSQL, Redis, ClickHouse
- **Web Frameworks:** Django, Django Ninja, FastAPI, Pydantic, Next.js/React (side projects)
- **Dev Environment:** Vim (primary editor), tmux, terminal-centric workflow, split keyboard enthusiast

## LANGUAGES

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- **English:** B2 Upper Intermediate – Aptis ESOL (British Council) 176/200 **Vietnamese:** Native