



# CHU NHƯ ĐỨC

Solution Architect

## About

Solution Architect and senior full-stack engineer with 13+ years building scalable backend systems, cloud-native infrastructure, and composable web platforms. Core stack: Node.js, TypeScript, Python, Google Cloud Platform. Currently at FPT Software, leading solution design for enterprise composable web (Sitecore XM Cloud, Next.js, Vercel) and CDN token enforcement for premium OTT delivery (Akamai, HarperDB). Comfortable at both architecture and production code levels. Led engineering teams across startup and enterprise phases, covering technical planning, system design, and hands-on delivery. Fluent in English.

## Contact details

Hanoi, Vietnam

+84988070102

[contact@chunhuduc.com](mailto:contact@chunhuduc.com)

[chunhuduc.com](https://chunhuduc.com)

## Employment History

### Solution Architect, FPT Software

May 2025 to Present · Hanoi, Vietnam

- Led solution design for the Middle-East Philanthropy initiative (ongoing): bilingual EN/AR digital experience with RTL, Sitecore XM Cloud + Next.js, Vercel/CDN-backed deployment; reusable components, editorial scalability, security and performance; roadmap alignment with customer Product Owner and cross-functional squad (BA, UX, FE, BE, QA, DevOps).
- Architected multi-region access-token enforcement for premium streaming: Akamai media delivery + HarperDB for high-throughput token state; mitigation of shared/reused tokens and abuse vectors (e.g. VPN scenarios); flows for legitimate vs blocked playback (e.g. 403 / alternate content where applicable).
- Drove architecture alignment, integration boundaries, and technical risk reviews across stakeholder groups.

### Freelance Developer: Python & TikTok Automation, Self-employed

2023 to 2025 · Remote

- Built a Python fleet system for managing 50-100+ TikTok accounts via Geelark cloud Android phones: unique per-device IMEI, MAC, WiFi fingerprint, and SIM; Webshare residential proxies (1 IP per account, country-matched); SQLite state store; 30-second poll daemon with 15-minute crash recovery.
- Engineered a content pipeline on top of yt-dlp, PySceneDetect, and ffmpeg: scene split, LUT color grading (40+ profiles, 1 random per phone), speed/pitch jitter, watermark replacement, and per-country caption rewriting via OpenAI/Gemini.
- Implemented account-safety patterns: post schedules derived from source channel cadence with 10% jitter, Geelark tag-based warmup quarantine, zero cross-account IP overlap, in-app posting via Geelark task API to mimic organic behavior.
- Built creator-focused automation: auto-editing, auto-captioning, trend detection, batch rendering, and scheduled posting via Playwright/Selenium.
- Integrated OpenAI + Whisper for voiceovers, scripts, captions, and content variations across markets.

## **CTO / Team & Technical Leader, TTC Technology Solutions**

May 2018 to May 2022

- Served as CTO and principal technical leader, responsible for engineering direction, system architecture, and technology strategy across multiple product lines.
- Led and managed full-stack teams, overseeing hiring, mentoring, code quality, sprint planning, and delivery execution.
- Architected company-wide backend systems using Node.js, TypeScript, NestJS, Express.js, and event-driven microservices.
- Designed and deployed cloud-native infrastructure on Google Cloud Platform (GCP), including GKE, Cloud SQL, Pub/Sub, Cloud Run, IAM, and Cloud Storage.
- Drove modernization efforts by introducing containerization, CI/CD pipelines, automated testing, standardized coding practices, and service observability.
- Led high-level technical planning with executives and stakeholders to align engineering priorities with business goals.
- Optimized system performance and scalability to support high-traffic workloads and real-time processing.
- Guided architecture reviews, resolved technical roadblocks, and ensured system reliability, uptime, and security.
- Delivered key enterprise features end-to-end, maintaining high engineering standards and predictable release cycles.

## **Full-stack Developer & Solution Architect, HOTTAB**

May 2017 to May 2018

- Architected the Report Engine Ecosystem (Core, API, Email Scheduler) using Node.js and MongoDB.
- Built a distributed Queue Management System capable of processing millions of jobs/day with Redis Queue and Node.js.
- Developed HOTTAB Admin Dashboard (AngularJS + React.js) enabling POS configuration, reporting, and analytics.
- Refactored legacy modules, optimized performance, and improved code maintainability across the platform.

## **Full-stack Developer & Data Analyst, Appota Inc.**

Oct 2016 to May 2017

- Built analytics dashboards for Gamota using Node.js, Yii, AngularJS, MongoDB, and PostgreSQL.
- Developed CMS systems, backend services, ETL scripts, and internal automation tools.
- Performed data modeling, migration, cleanup, and analytics to support marketing and product teams.

## **Full-stack Developer, FPT Software**

Apr 2016 to Oct 2016

- Contributed to global logistics platforms (Neopost Shipping Solutions, Neopost LABS).
- Developed frontend modules, integrated REST APIs, fixed production issues, and implemented unit tests.
- Collaborated with global engineering teams across the US, EU, and APAC.

## **Founder / Manager / Game Developer, OwlGaming Community**

Jan 2012 to Apr 2016

- Founded and scaled an online multiplayer gaming community with thousands of active players.
- Led a distributed team of 7 developers, 25 administrators, and 18 support staff.
- Developed game logic, backend systems, and web services using LUA, PHP, Node.js, MySQL, and MongoDB.
- Managed community operations, content releases, user support, and public communication.

## Selected Projects

### **TikTok fleet automation system**

2023 to 2025 · Self-owned

- Managed a Geelark cloud Android phone fleet (unique IMEI, MAC, WiFi fingerprint, SIM per phone) with Webshare residential proxies, country-matched and health-checked before every post.
- Built a content pipeline: yt-dlp scrape, PySceneDetect scene split, ffmpeg LUT color grading (40+ profiles), speed/pitch jitter, watermark replacement, OpenAI/Gemini caption rewriting per country.
- Implemented organic scheduling with source-channel cadence jitter, Geelark tag-based warmup quarantine, zero cross-account IP overlap, in-app posting via Geelark task API.

### **chunhuduc.com, portfolio and inbound system**

Self-owned · Live

- Built a production Next.js portfolio with typed profile/project content, secure contact flow, live chat, newsletter, and admin workflows.
- Implemented a grounded "Ask Duc AI" assistant using RAG, embeddings, pgvector, Neon Postgres, and server-sent event streaming with citations.
- Integrated ALTCHA verification, Resend transactional email, Cloudflare Email Routing, and Ably realtime messaging.

### **PyloMarket, prediction market platform**

Jan 2026 to Present · Self-owned

- Built a Next.js + HarperDB prediction market with Server Actions, GraphQL-defined data model, and order-book style trading flows.
- Implemented JWT/HttpOnly cookie auth, wallet management with encrypted key storage, and Solana deposit polling plus hot-wallet withdrawals.
- Shipped Docker packaging and GitHub Actions deployment to DigitalOcean Container Registry and VPS.

### **CheaterCheck.ai, lookup and crawler platform**

Dec 2025 to Present · Self-owned

- Built a Turborepo monorepo with a Next.js 15 front end and a NestJS API sharing typed DTOs, deployed to Vercel and a container host.
- Designed a Postgres-backed job queue on Neon/Prisma with a worker claiming jobs via FOR UPDATE SKIP LOCKED, streaming progress over Ably.
- Implemented a Stripe Checkout paywall with a signature-verified webhook unlocking reports and triggering Resend email.

### **Chợ Xuân Mai, hyperlocal marketplace**

Self-owned

- Built a hyperlocal marketplace for residents of a single apartment complex to pass along household items and post requests, with apartment verification before posting.
- Architected a Next.js PWA + NestJS API monorepo on Neon Postgres (Drizzle ORM), with Ably realtime for the listing feed and per-listing chat.
- Shipped a Facebook group ingest crawler for reference listings and deployed web to Vercel with the API on Google Cloud Run.

## stripe-global-payout, Stripe Global Payouts API

May 2026 · Portfolio reference

- Architected cross-border freelancer payouts on Stripe Global Payouts (Accounts v2 recipients, Outbound Payments) instead of Connect, with an extensible country registry.
- Built Node.js, TypeScript, Express services with a custom Stripe v2 HTTP client, Neon Postgres payee/payout persistence, and thin webhook handling with event dedupe.
- Packaged for Vercel serverless with a Postman collection and sandbox documentation for the payout lifecycle.

## ConOi, personalized daily letters for kids

Jun 2026 to Present · Self-owned, in progress

- Building an AI-personalized daily letter service from parent to child, tailored by name, age, and interests, with a printed take-home letter planned as the primary long-term channel.
- Built a cron-driven content pipeline on Next.js, Neon (Drizzle ORM), OpenAI, and Resend: topic rotation, resource dedupe, and AI content generation, validated with a real end-to-end email send.
- Shipped the landing page and onboarding wizard UI; database wiring and Vercel deploy are still in progress.

## Education

### Bachelor of Engineering in Software Engineering, FPT University

2009 to 2013 · Specialization in Embedded Systems

## Key Achievements

- ✓ Engineered a distributed queue system processing 10M+ tasks per day in production (HOTTAB, Redis Queue + Node.js).
- ✓ Designed multi-region CDN token enforcement for a premium OTT platform: Akamai delivery with HarperDB token state, abuse mitigation, and playback control for blocked sessions.
- ✓ Delivered mission-critical backend platforms as CTO at TTC: Report Engine Ecosystem (Core, API, Email Scheduler), event-driven microservices, and GCP infrastructure.
- ✓ Built Python automation systems for TikTok content creation: full pipeline from video scraping to captioned scheduled posting, deployed for creators with millions of monthly views.
- ✓ Led engineering teams across startup (TTC, HOTTAB) and enterprise (FPT Software) environments, covering architecture ownership, technical planning, and stakeholder communication.

## Skills

### Backend & Architecture

Node.js, TypeScript, NestJS, Express.js, Python (automation & AI workflows), REST APIs, Microservices, Event-driven Systems, Distributed Systems, High-Performance Backend Design, RAG systems, Stripe (Global Payouts, webhooks), Aply (realtime)

### Frontend

Next.js, React.js, Angular, Modern JavaScript (ES6+)

### Databases

PostgreSQL, pgvector, Neon Postgres, Drizzle ORM, HarperDB, Redis, MongoDB, MySQL, SQLite

### Cloud & DevOps

GCP, GKE, Vercel, Docker, CI/CD Pipelines, GitHub Actions, DigitalOcean, Cloud SQL, Cloud Storage, Pub/Sub, Monitoring & Logging

### Workflow & Engineering

Git, GitLab, Bitbucket, Jira, Confluence, Agile/Scrum, Code Review, Jest, PHPUnit

### Leadership

Architecture Ownership, Technical Planning, Mentorship, Stakeholder Communication, Sprint Leadership, Engineering Strategy

## **Legacy Experience (Secondary)**

PHP, AngularJS (1.x), MySQL, LUA

## **✕ Technical Tools**

### **Programming & Automation**

Python, Node.js, TypeScript, FastAPI, FFmpeg, MoviePy, OpenCV, AsyncIO, Shell scripting

### **AI & Workflow Automation**

OpenAI API, Gemini API, Whisper STT, ElevenLabs TTS, LLM-based content pipelines, embeddings, vector search, automation scripts (Playwright, Selenium)

### **Cloud & Infrastructure**

Google Cloud Platform (GKE, Cloud SQL, Pub/Sub, Cloud Storage), Docker, CI/CD pipelines, Monitoring & Logging

### **Data & Analytics**

PostgreSQL, Redis, MongoDB, Pandas, ETL pipelines, Google Sheets API, Reporting automation

### **Video / Content Processing**

Auto-subtitles, scene detection, frame extraction, video rendering pipelines, 9:16 formatting