

I build **calm, dependable software for real businesses** — currently the senior engineer keeping a live supermarket's point of sale running, every day. Offline-first when the network wobbles, bilingual when the team is, and tested because someone's day depends on it.

EXPERIENCE

Software Engineer

Apr 2026 – present

VinMart (supermarket retail suite) · Phnom Penh

Inherited the software behind a live multi-branch supermarket alone at handover — point of sale, barcode inventory, purchasing, reporting — and am today the senior engineer on the small team that has grown around it.

- **Inherited a live POS at handover** with zero test coverage and fully manual two-step deploys; wrote the operations runbooks within 48 hours and have shipped to production weekly since.
- **Built its next-generation replacement in 8 weeks, in parallel** — 53 tables, 130 API routes, 424 test files — staged for cutover while the legacy system keeps selling.
- **Offline-first sales with a durable outbox** — a sale is never silently dropped, even when the network fails mid-transaction.
- **Migrated legacy data reconciled to the cent**, and eliminated 16-second report cold starts with materialized views and scheduled cache warming.
- **Khmer-first bilingual**, down to the thermal-printer receipts.

LEGACY Laravel · React **REBUILD** Next.js · Supabase · Drizzle ORM · PostgreSQL

SELECTED PROJECTS

EmotionWork

live · visualemotionwork.com

Production platform for a Cambodian concert & event company running since 2013 — customers design their own stage in an in-browser 3D editor and book consultations.

- In-browser **3D stage designer** — drag-and-drop equipment, templates, PNG/PDF export.
- Bookings wire together the **Zoom API, email confirmations, and Google Sheets**.
- Built with a three-person university team — **still live on the client's domain today**.

Next.js · tRPC · MongoDB · Three.js / R3F · NextAuth · Cloudinary

LaneDash

senior capstone · [github](https://github.com)

A motion-controlled 3D endless runner — your webcam is the controller.

- **Python pose detection driving Unity gameplay over UDP** — jump, crouch, and lean to switch lanes; no sensors, no headset.
- **97% of user-testing players said they'd play again**; MET-based calorie tracking personalized per player.

Unity · C# · Python · OpenCV · MediaPipe · UDP

Encrypted Images

government workflow

End-to-end encrypted photo sharing — every image is encrypted in the browser before it leaves the device; the server only ever stores ciphertext.

- **Client-side AES-256-GCM with scrypt key derivation** — a zero-knowledge server, strict three-tier role model, English + Khmer throughout.

Next.js · Supabase · @noble/ciphers · Edge Functions · Zod · next-intl

SKILLS

FRONTEND

React 19 · Next.js · TypeScript
Tailwind CSS · Three.js / R3F · shadcn/ui

BACKEND

Node.js · PostgreSQL · Supabase
Prisma / Drizzle · tRPC · MongoDB
Laravel / PHP

CRAFT

Offline-first PWAs · Client-side crypto
i18n (EN/KH) · Unity + OpenCV · Vercel
CI/CD · Testing

EDUCATION

B.S. Computer Science · 2022 – 2025

Assumption University of Thailand

Senior capstone: LaneDash (motion-controlled Unity game)

CERTIFICATIONS

[AWS Academy — Cloud Foundations](#) ↗

[AWS Academy — Cloud Developing](#) ↗

LANGUAGES

Khmer — native

English — professional working proficiency

lytheansem.com

[live](#) · [this resume's home](#)

My portfolio — a living WebGL night-field, built like a product, not a template.

- One shared **WebGL canvas for the whole site** — the hero scene and eight interactive 3D project emblems, scissored per view for iOS context limits.
- The moon shows **tonight's real lunar phase**; the wind answers your clicks; the case studies tell the honest version of every story.
- **Single-draw-call model pipeline** — merged and meshopt-compressed from 51 draw calls / 502KB to 1 / 139KB.

Next.js · React 19 · TypeScript · Three.js / R3F · Tailwind v4

KH-Track

personal build

Sales & inventory PWA for Cambodian micro-entrepreneurs — street vendors, market stalls, TikTok live sellers.

- Recording a sale is **faster than the paper notebook it replaces** — mobile-first, installable, deliberately minimal.
- **Multi-tenant isolation via Postgres row-level security**, three roles with a built-in kill switch.

Next.js 16 · Supabase · Tailwind v4 · PWA

Also built

field notes at [lytheansem.com](#)

- **Encrypted Images** — see page 1; **Drift** — a touch-first point of sale tuned for nightclubs (React, Vite, shadcn/ui).
- **Eleven One Kitchen** — mobile-first restaurant site with QR table menus, Khmer + English typography (Next.js 16).

Ripple

personal build

Write once, publish everywhere — a multi-tenant social-publishing SaaS.

- One composer fans a post out to **Facebook, Instagram, TikTok, YouTube, and Telegram**, across multiple accounts per platform.
- **Multi-account workspaces with role-based access**; the composer previews each network's constraints before you hit send.

Next.js 16 · React 19 · Prisma · PostgreSQL · NextAuth v5

Car Analytics

[live](#) · [demo](#) · [source](#)

Used-car market dashboard — interactive drill-down charts by brand and model, still live on GitHub Pages.

React · Chart.js