# ANH HUYNH

anh.h.duy@gmail.com • +1 (858) 603-0877 • github.com/anhpls • linkedin.com/in/anhpls • anhpls.com

## PROFILE

Backend and full-stack software engineer building distributed systems, real-time data pipelines and reliable APIs, with experience in test automation. Focused on software that holds up under real-world failure, not just ideal conditions.

## EXPERIENCE

**Tag-N-Trac** | ***ESP32, ESP-IDF, Bluetooth Low Energy, n8n, Supabase, Next.js*** **Jun 2025 – Sep 2025**

Software Engineering Intern

- Engineered 120+ end-to-end Playwright tests across shipment filters, pagination, data exports, and real-time map systems, reducing manual testing time ~35% and increasing shipping confidence.
- Built real-time IoT data ingestion pipelines using n8n, Supabase, and Next.js, routing live hardware tracker data into a cloud analytics platform with sub-second update latency.
- Prototyped asset-tracking firmware on ESP32 microcontrollers, integrating Bluetooth Low Energy and WiFi connectivity to synchronize device telemetry with cloud backend systems.
- Diagnosed and traced failures across distributed system layers (frontend, backend APIs, IoT firmware, and real-time maps), developing a systematic debugging approach for complex multi-service failures.

## PROJECTS

**Tapstack** | ***Swift, SwiftUI, Supabase, PostgreSQL, VisionKit*** **Nov 2026 – Present**

iOS Loyalty Hub and Analytics Web Platform

- Architected a ledger-based rewards system in PostgreSQL where every balance is derived from append-only stamp and redemption records, keeping corrections, carryover and audit history consistent by design.
- Enforced all business logic at the database layer with 11 security definer functions and row-level security on 10 tables, so stamp limits, cooldowns and redemption rules can't be bypassed by a modified client.
- Built a fraud-resistant redemption protocol with expiring 4-digit codes, server-side validation and double-tap guards that prevent replayed or duplicated rewards.
- Developed the native iOS client in SwiftUI with an on-device VisionKit and Core Image pipeline that digitizes paper punch cards into verified rewards.

**Vexilo** | ***Python, FastAPI, Redis, PostgreSQL, Next.js, Docker*** **Apr 2026 – Present**

Distributed Task Queue System

- Built a distributed task queue with FastAPI and Redis using high, medium and low priority levels, where workers process jobs in priority order and each job is claimed by only one worker.
- Wrote simulated workers that inject crashes, slow jobs and random failures to stress the queue and observe how it handles bottlenecks and recovers.
- Added capped retries and a dead-letter queue so repeatedly failing jobs are set aside instead of blocking healthy work, with a Next.js dashboard to watch queue depth and failures live.

**AristoVLT** | ***Next.js, Node.js, TypeScript, TailwindCSS, PostgreSQL, Stripe, Vercel*** **Dec 2024 – Jun 2025**

E-Commerce Platform

- Built an e-commerce platform for a streetwear brand in Next.js and TypeScript, with 12 product pages, customer accounts and real-time inventory tracking across the catalog.
- Developed the backend API routes in Next.js and Node.js on PostgreSQL for products, carts and orders.
- Implemented JWT-based authentication and error handling across accounts and checkout.
- Integrated Stripe Checkout and tested the full payment flow end to end in Stripe test mode.

## TECHNICAL SKILLS

**Languages:** Python, Swift, C/C++, TypeScript, JavaScript, Java, HTML/CSS, Assembly Language (x86)

**Frameworks and Libraries:** Next.js, React.js, Node.js, TailwindCSS, Playwright, FastAPI, SwiftUI

**Databases and Tools:** PostgreSQL, Redis, Docker, Prisma, RESTful APIs, Supabase

**Tools:** Git, Jira, Notion, Vercel, n8n

## EDUCATION

**Georgia Institute of Technology** **Expected Dec 2029**

Master of Science in Computer Science

**California State University, Channel Islands** **Expected Dec 2027**

Bachelor of Science in Computer Science

**California State University, Long Beach**

Bachelor of Fine Arts in Animation

## COURSEWORK

Data Structures (C++), Algorithms, Operating Systems, Computer Architecture, Computer System Security, Computer Organization & Assembly Language, Programming Languages, C/C++ Programming, Intermediate Java Programming