

Tuan Hoang

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EDUCATION

California Polytechnic State University, San Luis Obispo

San Luis Obispo, CA

Bachelor of Science in Computer Science | GPA: 3.76/4.0

Expected May 2028

Relevant Coursework: Data Structures, Algorithm Design, Discrete Structures, Object-Oriented Programming (C++), Database Management Systems (SQL), Algorithms and Complexity

SKILLS

Languages: TypeScript, JavaScript, Python, SQL, C++

Backend & Data: Node.js, Express, FastAPI, PostgreSQL, Prisma, Redis, MongoDB, REST API design

Testing & DevOps: Node test runner, Supertest, Vitest, Docker, Docker Compose, GitHub Actions

Frontend: Angular, Next.js, React, React Native

Tools: Git, Postman, Google Gemini API

EXPERIENCE

Cal Poly Racing | Software Team Member

San Luis Obispo, CA

Part-tracking web app (Angular, TypeScript)

Aug. 2026 – Present

- Built a permission-aware Angular dialog that shows a part's template and instance notes side by side and saves only the changed field, covered by **11** unit tests.
- Fixed read-only users being unable to expand parts-table rows by checking permissions before blocking click events in two shared editable components, with **5** tests.
- Eliminated a yearly manual code edit by deriving the serial-number season prefix from the active season in the database instead of a hardcoded value.

Hack4Impact Cal Poly | Software Developer

San Luis Obispo, CA

Cal Poly Food Pantry inventory site

Aug. 2026 – Present

- Delivered the FoodItem data model, MongoDB-backed GET/POST API routes, and add-item and confirm-delete modals for a **6-person** team's Next.js inventory site across **7** merged PRs, with **7** Vitest tests.

Develop for Good | Volunteer Developer

Remote

Web Team – TAR Syndrome Association (nonprofit client)

May 2026 – Aug. 2026

- Raised the client site's Google Lighthouse Accessibility score (desktop) from **72** to **87** by remediating WCAG failures: corrected contrast ratios, restored H1–H3 heading hierarchy, and replaced ambiguous links with accessible buttons.
- Delivered **2 of 8** pages in a nonprofit site redesign by implementing Figma hi-fi designs in Square Online and revising them through weekly client reviews.

PROJECTS

Weather Proxy API | Node.js, Express, Redis, Docker

github.com/tuanhoang0117/WeatherAPI

- Cut median response time for repeat-city requests from **138 ms** to **1.6 ms (86x)** by placing a Redis cache-aside layer with configurable TTL in front of the Visual Crossing weather API.
- Kept the API serving requests through a Redis outage by designing the cache to fail open to the upstream API, verified with **7** CI tests covering cache hit/miss, 404/502 mapping, outage fallback, and 429 rate limiting.

Blogging Platform API | Express, PostgreSQL, Prisma, Docker

github.com/tuanhoang0117/BloggingPlatformAPI

- Verified full CRUD and case-insensitive keyword search against a real PostgreSQL database with **13** integration tests running in GitHub Actions CI.
- Cut test-suite runtime from **10.4 s** to **0.43 s (24x)** by diagnosing an unclosed Prisma connection pool that kept Node alive and closing it in a teardown hook.
- Reduced project setup to **one command** with no local installs by packaging the API and Postgres in Docker Compose with health-checked startup and automatic migrations.

Oculus MD | QuackHacks 3 – FastAPI, MongoDB, Gemini

github.com/tuanhoang0117/QuackHacks-3-2026

- Flagged unsafe medication combinations such as Warfarin + Metronidazole by building a FastAPI backend with **3** MongoDB-backed checks: drug interactions, contraindications, and re-dose timing.
- Kept safety verdicts deterministic by limiting Gemini 2.5 Flash to identifying medications from camera and document images, with every decision computed by a rule-based engine against the drug database.