

# Christopher Alpuerto

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## EDUCATION

### California State University, Fullerton

B.S. Computer Science

Fullerton, CA

Expected Graduation: May 2026

## RELAVENT COURSEWORK

Software Engineering, Cloud Engineering, Advanced Data Structures & Algorithms, Algorithm Engineering, Operating Systems, Artificial Intelligence, Python, Advanced C++

## EXPERIENCE

### Software Engineer

Teamlead (part-time) July 2025 – Present  
Los Angeles, CA

- Developed and maintained production backend services using **FastAPI** and **TypeScript**, implementing secure authentication, scalable API design, and reliable state management to support core platform workflows.
- Collaborated in a team of 3 to ship features end-to-end, writing clean, testable code, performing PR reviews, and deploying containerized services via **Docker** and **CI/CD** pipelines.

## PROJECTS

### HoopTuber | Next.js, FastAPI, Python, TypeScript, Google Cloud, Gemini API, Docker

Los Angeles, CA

- Developed and deployed a full-stack basketball video platform, serving **400+** waitlist signups and **50+** daily beta users, validating early product-market demand.
- Designed and implemented RESTful APIs using **FastAPI** to handle authentication, user workflows, and job lifecycle management.
- Developed a video analysis system using **Gemini API** and custom computer vision logic to extract basketball events and generate shareable highlight clips; implemented RBAC-based paid subscription tiers with **Stripe API** to enforce daily processing limits.
- Implemented **CI/CD** pipelines and **Docker** based deployments to automate builds, testing, and cloud releases across backend and worker services.

### Cloud Video Encoder | Python, FFmpeg, Google Cloud (Cloud Run, GCS, Pub/Sub), Docker

Dec 2025 – Present

- Developed an FFmpeg-based media normalization pipeline in Python to convert iPhone HEVC/.MOV videos to H.264/.MP4, eliminating codec incompatibilities that caused failures on 30–40% of uploads and increasing successful analysis rates by **35%**, unlocking support for **50%+** more users on **HoopTuber**.
- Containerized the service with Docker and deployed via GitHub Actions CI/CD, enabling reproducible processing across local and Cloud Run environments while reducing debugging time for corrupted HEVC inputs.

### Car Infotainment System | React, FastAPI, OBD, WebSockets, Mapbox, Java, Docker

August 2025 - Present

- Developed a real-time customizable car dashboard within a team of 4 using **React** for the frontend, while building REST APIs with **FastAPI** to handle authentication, Spotify control, navigation, and weather integrations
- Built a WebSocket streaming layer with **Python** to broadcast live vehicle telemetry (RPM, speed, temp) from mock generators and real OBD-II hardware to read real ECU data from a physical vehicle with low-latency updates
- Designed and implemented REST APIs with FastAPI for Mapbox routing, Spotify media control, and user management, with role-based access control and OAuth authentication.

### Trading System For ETFs | Python, JavaScript, HTML/CSS, Flask, YFinance API

Aug 2024 – Dec 2024

- Developed an automated trading system for ETFs (FNGU/FNGD) with a backtesting engine simulating trades on a \$100K virtual balance with **Python**, implementing SMA, Bollinger Bands, and MACD strategies to generate dynamic buy/sell signals
- Developed and deployed a full-stack platform with **Flask** and **JavaScript/HTML** on Heroku, using the Yahoo Finance API to visualize historical ETF data, custom date ranges, and strategy performance.

## TECHNICAL SKILLS

**Languages:** Python, TypeScript, JavaScript, Go, SQL, C++, Bash, HTML / CSS

**Frameworks:** React, Node.js, Next.js, Flask, FastAPI, PyTorch, Tensorflow

**Tools:** Git, GitHub, GitHub Actions, Docker, VS Code, GCP Services, AWS S3, Jira

**Concepts:** REST APIs, CI/CD, WebSockets, Agile/Scrum, Database Design, Cloud Deployment, RBAC, API Design