Nathan Punyataweekul

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EDUCATION

University of California Los Angeles — Expected Graduation: July 2026 | GPA: 3.7/4.0
Bachelor of Science in Computer Science — *Los Angeles, CA*
Relevant Coursework: Data Structures & Algorithms, Computer Architecture, OOP, Databases, Discrete Math, Linear Algebra, Efficient Algorithms, Intro to Software Engineering, Computer Security, Compilers

Moorpark College — Aug. 2021 - Jun. 2023
Associates of Science in Computer Science — *Moorpark, CA*

EXPERIENCE

Project & Dev Lead — Dec. 2024 – Present
Creative Labs — *Los Angeles, CA*
- Spearheaded fullstack Tinder-inspired pet adoption app using TypeScript to match adopters with shelter cats.
- Coordinated with design team to shape app concept & user flows, & led a dev team to build core features.
- Implemented Tinder-style swipe interface & supporting REST API for profile retrieval & swipe data syncing.
- Built a Gemini-powered engine to generate cat profiles, simplifying profile creation for shelters.
- Integrated Firebase Auth, streamlining sign-in flows & improving onboarding reliability.

Software Engineer Intern — Jun. 2023 – Dec. 2023
Moorpark College — *Moorpark, CA*
- Captured & processed 500+ drone images to build an immersive 3D model of the 150-acre campus.
- Automated RealityCapture CLI workflows with Python scripts, cutting 3D processing time by 3x.
- Deployed a Raspberry Pi-hosted WebSocket server (Node.js, Express.js, DJI SDK) for sub-20 ms drone control.
- Built a React/D3.js dashboard for real-time drone telemetry, boosting monitoring efficiency by 40%.
- Created an AWS Lambda-powered pipeline to auto-filter blurry images & manage metadata in PostgreSQL.
- Planned time-of-day captures & checkpoint-based flight paths to mitigate lighting, wind, & battery constraints.

PROJECTS

myGPT | *Python, PyTorch, NumPy*
- Developed a GPT model in PyTorch, covering Transformer attention, autoregressive training, & fine-tuning.
- Trained a 12M-parameter GPT model in PyTorch on 50M tokens to <2.0 validation loss in 10 epochs.
- Implemented PyTorch Head & MultiHeadAttention modules with n-dimensional tensor parallelism.
- Built a chain-of-thought GPT for addition (a+b→c) that solved 95% of 1,000 arithmetic problems correctly.
- Fine-tuned on Tiny Shakespeare to reach a 15% lower validation loss compared to training from scratch.

Bruin Hot Takes | *TypeScript, JavaScript, Node.js, Prisma, Redis, Socket.io, JWT, Google Cloud*
- A UCLA social media web app using TypeScript supporting real-time posts and chats for the UCLA community.
- Implemented JWT-based authentication using Express and Prisma to secure 1,000+ member accounts.
- Built real-time post and chat features using Socket.io on Google Cloud Run, achieving <100 ms message latency.
- Architected Prisma schema with Redis caching and composite indexes, cutting feed & chat API latency by 35%.
- Configured CI/CD for blue-green deploys & automated tests ensuring 99.8% uptime.

Zones | *Swift, Google Maps API, CoreMotion, HealthKit, Google Cloud*
- Developed a gamified running app where users claim zones by running enclosed routes and compete on a live map.
- Used Google Maps API and Firestore to track routes, sync territory data, and power real-time leaderboards.
- Added AI-powered route-generation to suggest new paths based on user history, available territory, & difficulty.
- Designed leaderboard, daily streaks, and territory alerts to drive user engagement and long-term retention.

TECHNICAL SKILLS

Languages: C++, Python, JavaScript, TypeScript, SwiftUI, Swift, SQL, HTML, CSS, Go, C, LaTeX
Tools & Technologies: Git, AWS, Docker, React, Node.js, Express.js, MongoDB, PyTorch, Tensorflow, PostgreSQL, Flask, Bootstrap, Reality Capture, D3.js, Pandas, ElasticSearch, Core Data, XCTest, Gemini API, OpenAI API
Concepts: Full Stack, Backend, Frontend, REST API, Microservices, Distributed Systems, Real-time Communication, Task Management Systems, Interactive Visualizations, Data Analytics, System Design, Software Engineering, Databases, Data Processing, Data Science, Embedded Systems, Parallel Programming, Operating Systems