

Thomas Nguyen

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EDUCATION

University of California, Irvine

Sept 2023 – June 2027

Bachelor of Science in Computer Science

GPA: 3.75

Relevant Coursework: Data Structures & Algorithms, Object-Oriented Design, Discrete Mathematics, Probability & Statistics, Computer Architecture, Operating Systems, Web Development

WORK EXPERIENCE

Software Engineer

2025 – Present

Design and Partnership Lab

Irvine, CA

- Built an AI-assisted research platform using LLM orchestration and backend workflows, accelerating onboarding and improving research consistency.
- Designed human-in-the-loop validation pipelines combining LLM outputs and embedding similarity checks, reducing duplication and improving data quality.
- Implemented backend microservices and REST APIs with TypeScript, Next.js APIs, and PostgreSQL to support multi-user collaboration and approval workflows.

Software Engineer Intern

June 2025 – Sept 2025

SportsStake

Los Angeles, CA

- Developed production Flutter features for real-time lineup management and trading, supporting high-traffic, user-facing systems.
- Designed and deployed scalable backend microservices and API development using Node.js, PostgreSQL, Docker, and AWS cloud infrastructure for real-time data ingestion and delivery.
- Improved system performance by 40% through Redis caching, API batching, and SQL query optimization, increasing efficiency during peak usage.
- Integrated automated testing into CI/CD pipelines to validate API behavior and improve deployment reliability.

Undergraduate Research Assistant

Jan 2025 – Present

UCI Computational Cognitive Neuroscience Lab

Irvine, CA

- Built data processing pipelines aligning behavioral events, rewards, and timestamps, enabling large-scale data analysis and machine learning workflows.
- Processed time-series and telemetry-style data to support analytics across thousands of experimental trials.
- Developed React and TypeScript dashboards to communicate analytical insights on learning dynamics across thousands of trials.

Machine Learning Research Assistant

Oct 2024 – June 2025

Calit2 – California Institute for Telecommunications and Information Technology

Irvine, CA

- Designed GRU, LSTM, and dual-encoder surrogate models to approximate spatiotemporal TTES heat propagation, achieving 8,900× faster inference than FEM simulations.
- Built a reproducible PyTorch training framework with MinMax scaling, sliding-window sequence extraction, synthetic scenario generation, and CUDA-seeded experiments.
- Evaluated robustness across 40+ out-of-distribution thermal profiles, analyzing representational drift, boundary-condition sensitivity, and sequential error propagation.

PROJECTS

AI Drift Monitor | TypeScript, Node.js, Express, PostgreSQL, Python, scikit-learn

- Built a production AI monitoring system using embedding-based similarity metrics to detect real-time model drift and distribution shift in deployed systems.
- Designed scalable backend ingestion pipelines with Node.js and PostgreSQL to version model states, log predictions, and trigger automated drift alerts.
- Implemented a Python microservice for inference auditing and adaptive thresholding, improving model reliability and early detection of instability.

Emergency Signal Platform | React, TypeScript, Node.js, Express, MySQL, React Leaflet, Tailwind CSS

- Developed a full-stack real-time emergency monitoring platform to visualize seismic events using interactive geospatial maps and live data feeds.
- Built and deployed RESTful backend services with Node.js, Express, and MySQL to ingest, process, and serve high-frequency event data.
- Implemented a TypeScript-based React frontend architecture to improve performance, maintainability, and user experience.

TECHNICAL SKILLS

Languages: Python, Java, C++, JavaScript, TypeScript, SQL, HTML/CSS, Bash, Git, Linux, OOP

Frameworks & Technologies: React, Node.js, Express, Flask, Flutter, PyTorch, scikit-learn, Docker, AWS (EC2), PostgreSQL, MySQL, Redis, Firebase, REST APIs, CI/CD, JWT Auth