

ERIK NGUYEN

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EDUCATION

University of California, San Diego

M.S. in Computer Science

La Jolla, CA

Sep 2024 - Present

- **GPA: 4.00/4.00**
- ML Learning Algorithms, Recommender Systems, Probabilistic Reason & Learning, Medical Image Computing, Algorithm Design, AI for Music, Networked Services

California State University, Fullerton

B.S. in Computer Science

Fullerton, CA

Aug 2022 - Aug 2024

SKILLS

Programming: Python, Java, C/C++, Go, JavaScript, Lua, HTML, LaTeX

Tools & Applications: Android Studio, VS Code, Git/GitHub, Docker, SQLite, PostgreSQL, GitHub Copilot

Frameworks & Libraries: PyTorch, TensorFlow, FastAPI, Flask, React, Pandas, NumPy, Scikit-Learn

EXPERIENCE

FORTIS Lab, University of Southern California (USC)

Graduate Research Assistant

Los Angeles, CA

Aug 2025 - Present

- Surveying state-of-the-art AI/ML methods for spatiotemporal wildfire **forecasting** and scoping an ML data pipeline, flagging data risks such as temporal leakage.

Thales Avionics, INC

Software Engineer-AI Intern

Irvine, CA

Jul 2024 - Oct 2024

- Led the research and evaluation of a new internal Thales **LLM**, assessing its adoption potential among **30+** current software engineers. Compiled findings into a technical report and delivered **3** presentations to key stakeholders.
- Developed and executed over **150 JUnit & Mockito** test cases on the Android platform, ensuring full **JaCoCo** compliance for quality assurance.

CEDDI Lab, California State University, Fullerton (CSUF)

Researcher

Fullerton, CA

Feb 2024 - Sep 2024

- Designed and evaluated a fair and transparent facial beauty prediction pipeline using **XGBoost**, **SVR**, and **GNN** models with landmark-based feature engineering and bias mitigation strategy.
- Co-authored a paper on bias-aware ML for facial image analysis, leading the experiments and manuscript writing.

Khoi Turner, INC

Software Engineering Intern

San Clemente, CA

Aug 2023 - Nov 2023

- Developed firmware and communication protocols between a **Particle IoT microcontroller** and main controller to enable customer interaction via the **Blynk** web interface for cellular-connected water dispensers.

PROJECTS

ScholarScope | AI Agent & Tooling

Aug 2025

- Designed a custom **MCP server** using **FastMCP** to provide **LLMs** with advanced academic research capabilities, including keyword, author, and institution search, citation exploration, and full-text retrieval.
- Implemented a **ReAct Agent** using **LangGraph** that orchestrates MCP tools, enabling dynamic agentic workflows and configurable integration of additional MCP servers.

Bloomscape Japan | Full Stack AI Web Application

Jun 2025

- Designed an AI-powered cherry blossom full-bloom prediction platform for 100+ Japanese cities, using **React** for the frontend, **FastAPI** for the backend API service, and containerized using **Docker Compose** for cloud deployment.
- Engineered a **LightGBM**-based forecasting model with spatiotemporal feature engineering, automatically retrained via scheduled **cron jobs** to deliver accurate real-time predictions.

Tversky Neural Networks | Deep Learning Research Implementation

Aug 2025

- Implemented Tversky Similarity and Projection layers in **PyTorch**, translating mathematical formulations from the paper *Tversky Neural Networks: Psychologically Plausible Deep Learning with Differentiable Tversky Similarity*.
- Benchmarked across multiple image classifier backbones (**ResNet**, **EfficientNet**, etc.), replacing standard classifier heads with the Tversky projection layer to evaluate against reported experimental results.

Pintrigue | *Full Stack Web Application*

Jul 2025

- Developed an Instagram-like social media platform for sharing and exploring geotagged photos via an interactive map using a **FastAPI** backend, **React** frontend, **Docker Compose**, and **PostgreSQL** with a **geohash-based index** for fast proximity queries and map-based filtering.
- Architected a secure authentication system with **JWT access** and **refresh tokens**, supporting seamless session management and token renewal.

TuneStacker | *Native Android Application*

Jan 2023

- Built a native Android music app from scratch using **Java**, supporting local playback, playlist management, and offline listening.
- Integrated **yt-dlp** to enable users to download and play audio from YouTube or other supported platforms directly within the app.

PUBLICATIONS

Regression Guided Strategy to Automated Facial Beauty Optimization through Image Synthesis

Erik Nguyen and Spencer Htin

arXiv preprint arXiv:2501.00811, 2025

Racially Inclusive Approach to Facial Beauty Modeling Using Machine Learning

Erik Nguyen, Sampson Akwafuo, Doina Bein, and Blessing Ojeme

Proceedings of the 2024 IEEE International Conference on Bioinformatics and Biomedicine (BIBM), pages 4467–4473. IEEE, 2024

HONORS & AWARDS

Most Innovative Project Of The Year, CSUF ECS Innovation Expo 2024 Competition

Apr 2024

Summa Cum Laude, Graduated with Honors at California State University, Fullerton

Aug 2024