

RICKY SUN

Los Angeles, CA | (949) 678-9293 | rickysun0704@gmail.com | linkedin.com/in/ricky-sun0704

EDUCATION

University of California, Irvine

B.S. in Applied & Computational Mathematics

GPA: 3.862/4.0

Irvine, CA

Jun 2026

TECHNICAL SKILLS

Data & ML: Python, SQL, PyTorch, NumPy, pandas, scikit-learn, DuckDB

Development & Computing: TypeScript, React, Next.js, Supabase, PostgreSQL, Git, Linux, SLURM

PROFESSIONAL EXPERIENCE

UCI Nanophotonics & Scientific Machine Learning Group

Irvine, CA

Undergraduate Researcher, Machine Learning & Computational Photonics

Oct 2024 - Present

- Built an end-to-end scientific ML workflow that conditioned PyTorch generative models on 6 physical variables and connected generated designs to differentiable simulation and gradient-based refinement.
- Trained and evaluated beta-VAE and conditional-VAE models on 8,174 training and 908 validation samples, selecting the best checkpoint at epoch 100 before early stopping at epoch 120.
- Designed a matched-budget benchmark across 3 initialization strategies and 3 seeds, showing that gradient refinement drove final performance; the conditional VAE led the upper tail, while random starts achieved stronger final mean performance.

UCLA Trustworthy AI Lab - Realy

Software Engineering Contributor

Sep 2026 - Present

- Authored two merged pull requests for the Realy collaboration, implementing responsive landing/auth screens and consistent chat, analytics, and billing interface styling.
- Implemented a workspace navigation-state utility and eight navigation tests; recorded Next.js production-build and TypeScript validation in the historical contribution checks.

ProofRound

Founder and Full-Stack Developer

Jun 2026 - Present

- Independently built and deployed a Next.js/TypeScript application using Codex, Supabase/PostgreSQL, Vercel, and GitHub, connecting resume analysis, job-specific tailoring, and text/voice interview practice.
- Integrated OpenAI text and voice models through APIs and implemented subscription-based model selection, reserving higher-capability models for premium tiers.

SELECTED PROJECTS

NYC Yellow Taxi Pickup Demand Forecasting

Aug 2026

- Built a Python and DuckDB pipeline that scanned 108.9 million NYC TLC Yellow Taxi records and created an hourly demand panel for the 20 busiest pickup zones selected using training data only. The pipeline checked SHA-256 hashes, used only past observations for lag features, and ran automated QA.
- Trained a gradient-boosted model with Poisson loss to produce rolling 24-hour-ahead demand forecasts. It reached 16.19% WAPE on 57,600 held-out zone-hours, 20.1% lower than the weekly seasonal-naive baseline.

Video Engagement Analytics

Sep 2026

- Built a Python and DuckDB SQL pipeline for 11.76 million KuaiRand video-interaction logs across 1,000 users; produced daily engagement and content-duration metrics from 10.68 million eligible standard-policy exposures.
- Decomposed an observed 10.95% weekly watch-time increase using exact Shapley attribution; isolated contributions of +1,025 hours from exposure frequency and -337 hours from average viewing depth.

Nepholio

Jun 2026 - Present

- Built and deployed a React nutrition-tracking prototype with serverless APIs, a meal planner, and dietitian-facing reports.
- Implemented Supabase authentication and revocable sharing with PostgreSQL row-level security.