Kendrick Nguyen

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EDUCATION

University of California, San Diego   **September 2024 – Present**
M.S. Electrical & Computer Engineering
- Concentration in Machine Learning & Data Science

University of California, San Diego   **September 2020 – June 2024**
B.S. Electrical Engineering | Minor in Cognitive Science
- Concentration in Computer System Design

WORK EXPERIENCE

Quality Engineer Intern | *Texas Instruments*   **June 2024 – September 2024**
- Characterized TI high-voltage isolation devices using oscilloscopes and ESD simulators to assess signal integrity, thermal performance, and ESD robustness.
- Automated data acquisition for +20 production-live quality tests using a Django and React application, streamlining real-time monitoring for QA teams.
- Developed a low-level load balancing firmware on an MSP430 to dynamically steer GPIB read traffic across test instruments via relay-controlled switching matrices, resulting in a 40% decrease in data throughput bottlenecks.

Makerspace Assistant | *UCSD ECE Department*   **October 2023 – June 2024**
- Trained students, staff, and faculty in the safe use of machines and tools (such as 3D printers, laser cutters, soldering irons, oscilloscopes, etc.).
- Designed a smart lock backend using Flask, MQTT broker, and a custom ESP32 breaker to manage safe access to hazardous equipment for +400 students.
- Developed a predictive electronics inventory management system leveraging OpenAI's LLM API and Nexar API to forecast component consumption, reducing surplus and saving +10% of facility budget.

Technician & Data Analyst | *UCSD The Basement*   **April 2023 – June 2024**
- Mentored +12 student startup incubators, supporting teams with hardware equipment training, workshops, and connections to specialized professors.
- Deployed a centralized data pipeline using AWS Edge functions, Python, and REST APIs to automate daily aggregation of marketing engagement data from Eventbrite, Google Forms, and Acuity, enabling seamless orchestration across platforms.
- Revamped conference scheduling system by deploying a Django and Firebase application to manage room bookings and to synchronize Google Calendar events, reducing scheduling conflicts for +80 students.

Systems Engineer Intern | *Northrop Grumman Aeronautics Systems*   **October 2022 – September 2023**
- Designed a data pipeline using Azure Data Factory and Python to preprocess aircraft failure data from a data lake, reducing data preparation time by 60%.
- Implemented a stacked ensemble model leveraging Python XGBoost to predict optimal corrective action plans on aircraft maintenance; feature-engineered key operational metrics, tuned hyperparameters via cross-validation, and deployed integrated model with internal team's analytics dashboard.
- Participated in an open-source machine learning competition focused on electronic warfare signal classification; performing exploratory data analysis on discriminative features from raw RF data, such as Power Spectral Density and Mel-Frequency Cepstral Coefficients.

PROJECTS

Airlert | *Typescript, React Native, Tailwind CSS, Tanstack, Supabase, RabbitMQ*   **July 2025 – Present**
- Engineered a real-time status-sharing cross-platform app, enabling air travelers to notify friends and family through one-tap alerts.
- Implemented efficient data fetching, pagination, caching, and rendering with React Query to support real-time updates and leveraged Supabase for authentication and user onboarding.
- Integrated a RabbitMQ-based microservice to handle high-volume notification workflows (e.g., friend requests, user updates), decoupling heavy tasks from backend and ensuring low-latency of delivery.

HVAC Storefront | *Typescript, Next.js, React, Tailwind CSS, PostgreSQL*   **December 2024 – June 2025**
- Collaborated with student software engineers and product designers to revamp website storefront to showcase services and organize appointment scheduling.
- Built a user-friendly admin dashboard for client management and editing of story sections, integrating JWT authentication with client-side storage to manage user sessions and tokens.
- Architected RESTful API routes and a type-safe data layer using Prisma (ORM) and Zod for runtime schema validation.

Relational Database Application | *C++*   **April 2024 – June 2024**
- Created a relational database from scratch capable of processing and remoting MySQL-like commands, utilizing architectural and design patterns to tokenize, parse, validate, dispatch, and output user-queries.
- Designed a storable library to encode and compress objects into storage blocks to reduce memory overhead and abstract allocation/deallocation of blocks.
- Enhanced row-search time by 85% through implementing an in-memory table of contents and a B-tree indexing model.

Manga Colorization | *Python, PySpark, PyTorch*   **February 2024 – March 2024**
- Implemented a CycleGANs model architecture using PyTorch to generate colorized images of grayscale manga panels.
- Boosted training efficiency by 24% using a lightweight gradient scalar in PyTorch to dynamically weigh for cycle-consistency loss, improving adversarial training stability and accelerating convergence.

SKILLS

- **Languages:** Python, C/C++, HTML/CSS, Javascript, Typescript, SQL, VHDL, ARM Assembly, MATLAB.
- **Technologies:** Flask, Django, Node.js, Next.js, React, React Native, PyTorch, PostgreSQL, MySQL, MongoDB, AWS, Supabase, Tensorflow, CUDA.
- **Developer Tools:** Git, Postman, Azure, Docker, Jira.