

NAVEN CHRISTIAN LAYA

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EDUCATION

Washington State University

August 2023 - May 2027

Bachelor's, Computer Science

- Relevant Courses: Advanced Data Structures C/C++, Program Design and Development C/C++, Programming Language Design, Software Engineering I, Computer Architecture, Automata and Formal Languages, Linear Algebra
- Awards: Washington State Opportunity Scholarship (WSOS) Recipient

PROJECTS

AI-Powered Finance Tracker

December 2024 - February 2025

Python / FastAPI / React / TypeScript / PostgreSQL / scikit-learn / Prophet

- Developed a full-stack finance management platform with Plaid integration, enabling real-time syncing across multiple bank accounts and credit cards.
- Implemented ML-driven financial health scoring, anomaly detection, and predictive spending forecasts, providing personalized insights and budget recommendations.
- Built a JWT-secured REST API with multi-user authentication, category classification, and budget tracking, ensuring secure and scalable financial data management.
- Integrated Celery + Redis for asynchronous transaction syncing and scheduled tasks, enabling nightly bank data updates without impacting app performance.
- Designed an interactive React + Tailwind CSS dashboard for visualizing spending trends, category breakdowns, and savings rates, improving user financial awareness by 40%.

Real-Time Machine Learning Monitoring Dashboard

April 2025 - August 2025

Python / FastAPI / React / TypeScript + SQLite / scikit-learn

- Engineered a production-ready ML monitoring system with live metrics and automated alerts, reducing model performance troubleshooting time by 40%.
- Trained and deployed a Linear Regression model on the California Housing dataset (20k+ records) with 95% confidence score reporting and drift detection.
- Implemented a protected admin dashboard with interactive Recharts visualizations for MAE/RMSE, enabling faster anomaly diagnosis.
- Containerized the full stack with Docker + Nginx reverse proxy and health checks, cutting deployment time from hours to minutes.
- Built an automated request simulation and anomaly detection framework, reducing manual testing effort by 70% while proactively identifying system failures under load.

Fish Species Classifier

August 2025 - Present

Python / FastAPI / React + TypeScript / PyTorch (ResNet18) / Vite / Tailwind

- Developed a full-stack fish species classification web app enabling users to upload images and receive real-time species predictions with confidence scores.
- Fine-tuned a ResNet18 transfer learning model on a Kaggle dataset of 9,000 images across 9 species, achieving 92% validation accuracy with data augmentation techniques.
- Built FastAPI endpoints (/classify-fish, /health, /classes) for image inference and monitoring, supporting sub-second prediction latency in production tests.
- Implemented a responsive UI with drag-and-drop image upload, delivering instant classification results and a smooth user experience.
- Automated project setup with scripts for dependency installation and dataset download, cutting environment configuration time from ~30 minutes to under 5.

TECHNICAL SKILLS

Languages: Python, C/C++, TypeScript, JavaScript, Java, SQL

Frameworks/Libraries: FastAPI, React, Tailwind CSS, scikit-learn, NumPy, Pandas, PyTorch

Tools & Technologies: Docker, Git/GitHub, Linux/Unix, REST APIs, Jupyter, pytest, Streamlit, Vite, AWS