

Miguel Mascareno

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Education

University of California, Santa Cruz

Expected Grad Date: June 2025

Bachelor of Science in **Computer Science**

Bachelor of Science in **Computer Engineering**

with a Concentration on **Networks**

Experience

AnyLog Federated Learning Platform

Jan 2025 - Present

- Served as the Project Owner in a team of six students when we partnered with AnyLog through a university program to develop a Federated Learning Platform leveraging Edgelake to allow edge devices to locally train models on private local data and share only the resulting model weights.
- Implemented API containerization options through Docker to allow for simulating a network on a single host, allowing us to test the platform more efficiently with the use of rapid deployment and teardown of network configurations
- Coordinated team efforts to utilize each members' qualities and allow each person to explore concepts they wanted to add to their toolbox
- Created Release Plans to synchronize our tasks and provide a clear foresight of the project goals that aligned with the Sponsors' expectations

Projects

RepIt

- Served as the Project Owner of a development logging site where users could note down their progress session by session.
- We used the Anthropic API to allow users to query information about their progress without the need to format every input. Textbox data gets read by the LLM which extracts meaning and provides the user with a colloquial explanation
- Leveraged Neon for database hosting, Clerk for authentication, Jest for testing, and Drizzle Object-Relational Mapper
- Pages: Sessions, Goals, Locations, Supplements

E-Commerce Website

- Collaborated with a team of six to create an Amazon clone with the use of microservice architecture for account services, product services, and api key services
- Included an Admin page that allowed for account and product manipulation, a Shopper page that allowed users to query products in an Amazon inspired UI, and a Vendor App that allowed vendors to post products for sell
- Utilized Git for version control and CI/CD pipelines for automated testing
- Containerized using Docker to allow for rapid deployment of services and database during development

Music Recommendation Model

- Tasked with creating a system that allowed us to assign weights to various categories of the data in order to create embeddings for each song. Varying the weights of each section allowed us to create multiple embeddings for each song which we then used to test and monitor our progress.
- Collaborated in a team of 5 to apply machine learning concepts in order to create a music recommendation system similar to Spotify

Skills

Frontend: React, Next.js, TailwindCSS, Shadcn, MUI

Backend: C/C++, Git, Docker, Python, PostgreSQL, Typescript, Javascript, Rust, FastAPI, Jest