Marco Ferreira

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Education

Rutgers University — New Brunswick, NJ
Bachelor of Science in Computer Science (3.7 GPA) — *Sep. 2024 – Dec. 2026*
- Dean's List (2024)

Ocean County College — Toms River, NJ
Associate in Science of Computer Science (3.92 GPA) — *Sep. 2022 – May 2024*
- Dean's List (2022–2024)

Experience

Senior Software Engineer — June 2025 – Present
HCLTech - AT&T Labs — *Middletown, NJ*
- Designed and implemented a networking diagram agentic workflow capable of generating **Draw.io diagrams** with up to 50 Cisco network nodes, supporting both Layer 2 and Layer 3 connections.
- Extended the program with AI-driven query-to-diagram automation, generating over 1,000 high-quality training images to support internal model development and improving workflow efficiency by 500%.
- Enhanced the agentic workflow to parse Cisco configurations and automatically convert them into accurate and structured diagrams.
- Developed of an internal **agent platform and registry system**, enabling agents to register, collaborate, and autonomously respond to user tasks through A2A communication.

Software Developer — August 2022 – March 2025
Externetworks - AT&T Labs — *Middletown, NJ*
- Designed and implemented a scalable full-stack AI platform using **React, FastAPI, NodeJS, torch, and transformers** to deliver advanced analysis and understanding of videos, images, and audio. Integrated with **Weaviate** and **ImageBind** for seamless company-wide data retrieval and vectorized search capabilities.
- Led and mentored a team of five interns on artificial intelligence projects, ensuring successful project completion and skill development.
- Created a real-time Android app for disabled individuals, enabling camera-based chat and queries, utilizing **React Native, FastAPI, transformers, and torch.**

Software Engineer — December 2022 – May 2024
Ocean County College - Joint Base McGuire-Dix-Lakehurst — *Toms River, NJ*
- Led a team of 5 developers to build a scalable web application for Joint Base McGuire-Dix-Lakehurst, enabling text and voice understanding with features like web search, PDF querying, and table extraction, using **FastAPI and Streamlit** which solifified a continued relationship between Ocean County College and JBMDL.
- Integrated **LLamaIndex** and **PostgreSQL** to develop a robust querying system capable of accurately searching and citing over 10,000 pages of public documents.
- Developed a self-hosted kiosk application with **HTML, CSS, JavaScript, and PHP,** featuring **MySQL** database integration and CSV export functionality for efficient data management.

Personal Projects

Draftly | Google Docs–Style Collaborative Editor — 2024
- Built a real-time collaborative editor with **Operational Transformation (OT)** over **WebSockets**, ensuring low-latency, consistent updates across multiple users.
- Designed a scalable backend using **Go, Python, and JavaScript**, with a **RESTful CRUD API** for user and document management backed by **Postgres**.
- Deployed on **AWS**, integrating **S3** for document storage and achieving efficient synchronization with fault-tolerant updates.

Technical Skills

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, Golang, Dart
Frameworks: React, React Native, Node.js, Flask, FastAPI, Streamlit, Flutter, Mesop
Developer Tools: Git, Docker, Unix, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, AWS, Ngrok, Nginx