MARCO PAREDES

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RELEVANT SKILLS

Full-Stack Engineering, Microservices, Distributive Systems, Product Engineering, Statistical Learning, Deep Learning, ML Algorithms, Object-Oriented Design and Data Structures with Python, Data Structures with Java, Data Science

Software Skills: Python, AWS, REST, SQL, NoSQL, Google Cloud, Firebase, JavaScript, React, Next.js, Node.js, Docker, Git, PyTorch, Pandas, NumPy, OpenCV, Matplotlib, Java, Linux/UNIX, MATLAB, C/C++

EXPERIENCE

***Software Engineering Intern* – Qualcomm** | San Diego, CA | June 2022 – September 2022

- Demonstrated strong competency in **Python** & **SQL** via developing scripts to sync data between online API and **AWS RDS** of an end-to-end system, resulting in streamlined data flow of over 10k+ data points
- Collaborated with multiple teams to gather functional requirements, helping in the design of **SQL** schemas
- Extended internal tool by automating 100+ email reports from **AWS S3** database using **Python**, resulting in increased productivity by 200%
- Led initiative for product use case analysis and design in intern summer hackathon, placed 2nd out of 20+ teams

***Software Engineering Intern* – Northrop Grumman** | San Diego, CA | June 2021 – September 2021

- Collaborated cross-functionally with clients via performing needs assessments to develop a freshwater data visualization web application featuring 1k+ data points
- Revamped GUI & backend, **JavaScript** WebGL GUI with Matplotlib data representation, optimized **Python-Pandas** backend for improved response
- Presented demos to key stakeholders to share product information and potential, leading to the project and team being highlighted in a company-wide report and a nomination for the 'Best Intern Project' award within the company

***Medical Device Research Assistant* – Center For Memory & Recording Research** | UCSD | Sept 2019 – March 2020

- Researched design and rapid prototyping of an IoT ophthalmic device by testing the functionality of its electrical design with **C/C++**, work contributed was published in the peer-reviewed research journal *Microsystem Technologies*
- Designed automation script with **C/C++** to collect and classify 1k+ data points of the temperature of stepper motors, insights guided the decision-making of the type of stepper motor and reducing critical high temperature by 40%

PROJECTS

YouTube Skeleton Clone (github.com/marcopared/youtube-clone) | August 2023

Skills: JavaScript, Node.js, Next.js, Google Cloud, Firebase, Cloud Pub/Sub

- Spearheaded development of a simplified YouTube clone using **JavaScript** and **Google Cloud**, achieving a 90% completion of core YouTube functionalities, including user authentication, video upload, transcoding, and data storage
- Implemented **Cloud Pub/Sub** for asynchronous video processing and utilized **Google Cloud Storage** for efficient video storage and transcoding via ffmpeg, reducing video storage by 70% and accelerating video availability

Automated Drone Flight Control (github.com/marcopared/real-time-drone-interface) | April 2023

Skills: Python, FastAPI, JavaScript, Plotly, Web Sockets

- Designed a web application with web sockets in **FastAPI** to control drones using **Python**, providing a real-time interface for user-driven drone command, increasing efficiency by 50% compared to previous manual control systems
- Created a multithreaded live plotting system for drone paths using **JavaScript**, enhancing response time by 35% and providing users with real-time data visualization for better flight control

Raspberry Pi Dynamic Weather Station (github.com/marcopared/raspi-weather-station) | March 2023

Skills: Python, JavaScript, Plotly, REST API, SQL

- Developed a Raspberry Pi-based weather station with a **Python RESTful API** for real-time data collection on light levels, temperature, and humidity, improving data accuracy and resolution by over 50%
- Engineered a data pipeline using **Python** for an **SQL** database that was dynamically plotted in real-time using **JavaScript**, data visualization updates were achieved every 1 - 2 seconds, improving user interaction speed by 50%

Face Recognition with Deep Learning (github.com/marcopared/face-recognition-ece196) | December 2020

Skills: Python, PyTorch, OpenCV, AWS

- Developed an IoT module prototype on Raspberry Pi using **Python** and **OpenCV** to enable real-time face detection and recognition, increasing efficiency by reducing manual identification efforts by 60%
- Trained a deep learning VGG16 model on a GPU **AWS EC2** instance using **PyTorch** with a face dataset of over 10,000 images, achieving an accuracy of 95% in classifying faces

EDUCATION

B.S. in Electrical Engineering, Machine Learning, University of California San Diego, June 2023