David Calderon

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Education

Georgia Institute of Technology (Atlanta, GA) August 2022 – December 2024

- Senior, B.S. in Computer Science; Threads: Systems/Architecture and Information Internetworks; GPA: 3.92
- Relevant Coursework: Data Structures and Algorithms (Java), Advanced Computer Architecture (C++), Operating Systems (C), Computer Systems/Networking (C), Database Implementation (C++), Grad. Machine Learning (Python)

Work Experience

Google: Software Engineering Intern (Sunnyvale, CA) Summer 2024

- Developed monitoring infrastructure for Google's server cooling patterns and statistics for DIMM components by creating a data processing and analysis pipeline using C++ and Flume Pipelines.
- Created a dashboard with 15 data views for various DIMM metrics, each which displays aggregated information across Google's millions of servers over a 3-year (and gradually increasing) window, using SQL and dashboarding tools.
- Modified data pipelines and dashboard queries based on adapting requirements to ensure final end-user satisfaction.

Amazon: Software Development Engineer Intern (Austin, TX) Summer 2023

- Doubled average ad targeting affinity values for Amazon Audio services by creating new algorithm in AWS Lambda with Java for categorizing audience insight data, for improved ad targeting services.
- Increased number of insights used for data gathering/dashboard population by 25x by communicating with internal API team for best usage of API; created Amazon S3 services to cache collected data into CSV files for data analysis.
- Researched and implemented additional features, such as filtering of low-relevance data, building feature flags for insight API requests, and logging of formatted data for more informed development decisions.

Organizations

RoboJackets: RoboNav Team - Software Lead September 2022 - Present

- Leading software team of 20 members to develop software for a Mars rover for the University Rover Challenge.
- Created image processing node to process identifications and orientations of ARUCO tags using C++ and ROS2.
- Developed software/firmware for commands to be consumed/processed by a Teensy microcontroller, as well as for transmitting/processing GPS and IMU data over Serial, using C++.
- Working on wheel encoder feedback transmission over UDP for ROS2 integration, using C++.

GT HIVE ECE Makerspace – Embedded Systems Master Peer Instructor Jan 2024 – Present

- Assisting end users primarily with embedded systems development, primarily Arduino, ESP32, and Raspberry Pi.
- Developing occupancy tracker to track the number of people in the makerspace, using Arduino and IR hardware.

Technical Projects

Relevant Class Projects Spring 2024

- Virtual Memory Optimization: improved virtual memory performance by implementing copy-on-write and zero-page allocation strategies, using C in the xv6 OS. Involved tracking usage and changes to memory by all processes.
- Custom Scheduling Algorithms: implemented Round Robin/FIFO with priority scheduler, as well as the Linux CFS scheduler, using C in the xv6 OS. Involved tracking the metadata of various processes and re-scheduling periodically.

Stock Trading Simulation – https://stock-trading-simulation.herokuapp.com Spring 2022

- Developed a 5-page website to allow users to trade artificial stocks with real-time market values, add friends and trade with them, and track gains in investment, using ReactJS, MongoDB, NodeJS, and Express.
- Used an external stock price API and optimized to minimize calls to it by caching data in the MongoDB database.

Super Metroid Game Recreation - youtube.com/watch?v=va7BnZfb_rY Fall 2021

- Recreation of Nintendo's 1994 game "Super Metroid" using C# and the Unity game engine.
- Developed modular scripts for game components and defined their interactions to allow for game functionality.

Skills/Interests

Technical: C, C++, Linux, Java, C#, Python, SQL, HTML/CSS/JavaScript, NodeJS/ExpressJS, MongoDB, ReactJS
Languages: English (native), Spanish (native)