Christian Velasquez

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Education

University of California, San Diego **Sep 2019 – Jun 2024**
B.S. Computer Engineering *San Diego, CA*

Experience

Outlier AI **May 2024 – Present**
Prompt Engineer *San Diego, CA*

- Created and reviewed mathematical prompts and coding algorithms, delivering modified training data and enhancing client comprehension of AI solutions utilizing Jupyter Lab software.
- Evaluate and rank AI-generated responses over 5 different benchmarks to promote accuracy across 10+ domains.
- Collaborated with development teams to refine prompt responses and overall LLM performance in 5+ industries.

San Diego Super Computer Center **Jun 2021 – Sep 2021**
Software Engineer Intern *San Diego, CA*

- Constructed mobile application designed to monitor fitness accomplishments, tracking 10+ user metrics.
- Collaborated with 6-person cross-functional team in an Agile environment, participating in biweekly sprints, daily stand-ups, and iterative testing to guarantee continuous development of high quality software
- Architected and implemented the back-end infrastructure with Google Cloud Firestore, optimizing data retrieval pipeline, improving application response time by 20%

Projects

YouLostIt BLE Sensor | *C / C++, STM32Cube IDE, Digital Logic Analyzer* **Nov 2023**

- Designed and developed a privacy-preserving battery-powered BLE sensor using the STM32L4 MCU Family, enabling real-time location tracking with a battery life of up to 4 weeks.
- Engineered optimized firmware designed to manage BLE communication, LED indicators, and collect location data, reducing power consumption by 35% compared to initial benchmarks.
- Conducted extensive debugging and validation using a Digital Logic Analyzer, identifying and resolving mission-critical bugs that improved sensor accuracy by 20%.
- Utilized a digital logic analyzer to validate and debug sensor data, ensuring accurate and reliable performance of the device, particularly in enabling and communicating over Bluetooth Low Energy (BLE).

Russia-Ukraine's Impact on Gasoline Pricing | *Python, Jupyter Notebooks, BeautifulSoup, Seaborn* **Mar 2023**

- Developed and executed web scraping scripts to collect 2800+ data points across 3 different time periods with respect to nearly every country in the world for comprehensive exploratory data analysis.
- Cleaned and normalized 2500+ data points leveraging log scaling, Z-score normalization, and cube root transformations to filter for extraneous observations; created detailed visualizations to communicate key patterns and findings.
- Deployed Mann-Whitney U and KS tests in Python to conduct statistical analyses and isolate significances in distributions across groups; compared results with control data sets to identify differences and validate findings.

JCC Processor | *SystemVerilog, RLT Design, ModelSim* **Jan 2023**

- Constructed comprehensive high-level behavioral diagram outlining all the specifications and interactions of each bus operating Draw.io and Microsoft Suite to enhance project timeline and requirements.
- Modified and tested individual processor components using test bench modules written in SystemVerilog, ensuring accurate and reliable project implementation through isolated verification.
- Executed a suite of sample test programs on the processor, showcasing its versatility and robust performance in handling multiple instructions.

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Parallel Computing
- Embedded Systems
- Operating Systems
- Computer Security
- Artificial Intelligence
- Computer Architecture

Technical Skills

Languages: C, C++, Python, Shell Scripting, Verilog/SystemVerilog, HTML/CSS, Assembly, Javascript
Tools and Technologies: VCS, GDB, Digitial Logic Analyzer, ModelSim, Firebase, Google Test Framework, Adobe Suite