Jorge Emanuel Nuñez

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Education

San Diego State University | **San Diego, CA** May 2027
- *M.S. in Computer Science*
  Selected Coursework: Machine Learning, Computer Networks & Distributed Systems, 3D-Game Programming

University of California, Berkeley **| Berkeley, CA** May 2024
- *B.S. in Electrical Engineering and Computer Sciences*
  Relevant Coursework: Database Systems, Operating Systems, Artificial Intelligence, Algorithms, Data Structures

Experience

Qualcomm | San Diego May 2023 - Aug. 2023
Software Engineering Intern
- Developed and maintained Python automation scripts for testing and validation, processing large datasets of performance metrics.
- Implemented CI/CD pipelines using Bash and CMake to automate testing workflows, reducing deployment time by 40%.
- Collaborated in an Agile environment using Git for version control and Jira for project tracking.
- Optimized system performance through data-driven analysis and implementation of efficient algorithms.

Algorithms & Computing For Education Lab | UC Berkeley Feb. 2021 - May 2024
Research and Development Assistant
- Designed and implemented RESTful APIs using Node.js/TypeScript to integrate real-time cheat detection with PrairieLearn, handling 200+ concurrent users.
- Built and maintained PostgreSQL databases for storing and managing assessment data.
- Developed automated test suites and CI/CD pipelines for continuous deployment, ensuring 99% system uptime.
- Created comprehensive API documentation and maintained version control using Git, facilitating collaboration across a team of 5 researchers.

Projects

Traffic Sign Recognition using CNN | Personal Project
- Achieved 97%+ classification accuracy on the GTSRB dataset by training a convolutional neural network in PyTorch.
- Applied image preprocessing techniques (histogram equalization, normalization) and data augmentation.

Yomitan Predictive Query Bar | *open source contribution*
- Added a Trie-backed predictive query bar to the yomitan browser extension for fast search results based on installed dictionaries.

Pinto's Operating System | *CS162: Operating Systems*
- Developed user program support, system call interface, priority thread scheduling, and cached file system in C of the Pintos Operating System in a team of 4.
- Implemented robust synchronization primitives including semaphores and priority donation to prevent priority inversion in multi-threaded processes.

Database Management System | *CS 186: Database systems*
- Engineered a robust relational database system in Java supporting ACID-compliant transactions, query optimization, and recovery mechanisms.
- Implemented B+ Tree indexing for efficient query performance, reducing lookup times by 60%.

Gitlet Version Control System | *CS 61B: Data Structures*
- Engineered a lightweight version control system in Java implementing core Git functionality.
- Executed snapshot tracking, branching, merging, and conflict resolution algorithms.

Activities

Google Computer Science Research Mentorship Program (CSRMP) Sep. 2021 - Dec. 2022
- Selected for a prestigious mentorship program aimed at advancing research skills in computer science.
- Collaborated with Google engineers and researchers on a project focused on computer science education.

Skills

- **Languages:** Python, Java, TypeScript/JavaScript, SQL, C/C++
- **Frameworks & Libraries:** PyTorch, Node.js, RESTful APIs, PostgreSQL, Django, React, Pandas, NumPy
- **Tools & Platforms:** Git, Docker, CI/CD pipelines, Jira, PrairieLearn