Anthony Salinas Suarez

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Education

- **University of California, Berkeley** — Berkeley, CA
  Bachelor of Science in Electrical Engineering & Computer Sciences (EECS) — *August 2020 - May 2024*
  Relevant Courses: Machine Learning, Signals and Systems, Computer Graphics, Operating Systems, Robotics, Optimization Models in Engineering, Artificial Intelligence, Computer Security, The Structure and Interpretation of Computer Programs, Data Structures, Great Ideas in Computer Architecture (Machine Structures), Discrete Mathematics and Probability Theory, Designing Information Devices and Systems I & II

Experience

- **UC Berkeley Electrical Engineering and Computer Sciences** — Berkeley, CA
  Undergraduate Student Instructor (uGSI), Tutor — *August 2022 - May 2024*
  - **Computer Architecture Student Instructor**: Instructed a discussion section for 40+ students, prepared lectures & worksheets, held office hours, and offered support to 700+ students in the course entitled CS61C: Great Ideas Of Computer Architecture (Machine Structures). Course material included: machine architecture, principles & logic of digital systems, operating systems, CPU design, RISC-V, and C.
  - **Computer Architecture Tutor**: Instructed a weekly tutoring section with 5+ students and held office hours. Prepared mini-lectures and worksheets in order to specially aid these students in exploring the course material more thoroughly and through a variety of learning methods. Particularly passionate about providing additional support & aid to students with disabilities, extenuating circumstances, and less computer science experience.
- **ModalAI** — San Diego, CA
  Software Engineering Intern — *May 2023 - August 2023*
  - Worked on VOXL Portal, a web user interface that links VOXL hardware to remote software. Enables features like remote camera inspection and debugging tools hosted on ModalAI's fully autonomous computing platform.
  - Implemented various key features such as a H264 frame stream option using JMuxer, a javascript mp4 muxer.
  - Debugged existing features, greatly improving consistency and reliability. Features included light/dark mode, and GUI UX.
  - Gained experience with Mongoose, an embedded network server and network library written in C/C++.
  - Became familiar with Websockets in Javascript that allow for two-way communication between a browser and server.
  - Gained valuable experience working with a team of software engineers on a substantial full stack file system, and vastly improved programming maturity.

Skills Summary

- **Programming Languages**: Java, Python, C, SQL, Scheme (Lisp), Golang, RISC-V, x86, HTML, CSS, JavaScript, C++, Rust
- **Technologies & Frameworks**: Mongoose (C/C++), React.js, Websockets (JS), JUnit, NumPy, Pandas, Sckit-Learn, Tensorflow, CMake, Next.js, Node.js, Tailwind, OpenGL
- **Developer Tools**: Git, Google Workspace, Microsoft Office Suite, VSCode, Netlify, LaTeX
- **Language Fluency**: English, Spanish

Programming Projects

- **Personal Portfolio**: Developed an online portfolio showcasing my experience and projects using React, HTML5, and CSS. This website is hosted on Netlify and the repository is available on Github.
- **PintOS**: Led development of an x86 OS in C with a team of four. Designed user program interactions, priority scheduler, synchronization, and multithreading. Created an inode-based file system with buffer cache, supporting extensible files and subdirectories. Optimized file system for efficient reads and writes.
- **Optimized NumPy Package**: Implemented basic matrix operations including addition, subtraction, multiplication, and exponents. Optimized program using parallelism through OpenMP and Intel Intrinsics.
- **Version Control System**: Developed a version control system, similar to git in order to track different work histories. Implemented key features such as add, checkout, branching, and merge. Added remote functionality.
- **Physically-Based Renderer**: Implemented a physically-based renderer on the CPU using a pathtracing algorithm. Renderer relies on ray-scene intersections, acceleration structures, and physically based lighting and material models.
- **Cryptographic File System**: Developed a google drive cryptographic file system in Golang. Key features: user authentication, multiple user sessions, file storing, editing, loading, sharing, and revocation. Utilized cryptographic functions when storing information on the server side database in order to preserve secrecy in communications between clients, and allow any malicious behavior to be detected. Implemented efficient algorithms for inserting and fetching files.

Affiliations

- **Hispanic Engineers & Scientists (HES)**: Served as a committee member for HES, a community and a resource for underrepresented Latinx students in STEM. Attended professional development panels led by professors and guest speakers, and participated in growth workshops.
- **Architecture, Construction, & Engineering (ACE) Mentor Program**: Developed presentation skills, budgeting techniques, and architectural plans using Autodesk Revit and AutoCAD to propose redevelopment in an unused city site.