Abi Lopez

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Education

Stanford University — Master of Science in *Computer Science*, **Class of 2025**
Stanford University — Bachelor of Science in *Electrical Engineering*, Minor in *Human Rights*, GPA 3.7, **Class of 2023**

Relevant Coursework: Artificial Intelligence: Principles And Techniques (C++), Design And Analysis Of Algorithms (Python, C++), Digital System Design (Verilog), Principles Of Computer Systems (C, C++), Computer Systems From The Ground Up (ARM Assembly, C), Programming Abstractions And Data Structures (C++)

Professional Experience

IBM, San Jose — Senior Backend Developer — **JUNE 2023 - PRESENT**

- Designed and developed a full-stack web application to visualize hardware storage structure and capacity improving user's ability to manage and optimize storage. Programmed with React, Express Node.JS, Axios, and z/OSMF REST API
- Developed and expanded on REXX script to format memory hex dump to corresponding PL/X control block mapping enhancing readability and reducing debugging time for the DFSMS VSAM/RLS team
- Empowered developers with a versatile build bash script within Jenkins pipeline, ensuring accurate parsing for parameters with improved parameter flexibility and validation

Inspirit AI, Palo Alto — Artificial Intelligence Instructor — **JUNE 2022 - PRESENT**

- Taught over 100 students from elementary to college level an Artificial Intelligence and Machine Learning curriculum that includes linear and logistic regression, natural language processing, and convolutional neural networks
- Constructed over 15 machine learning models using Python and AI libraries like TensorFlow, Sci-kit Learn, Keras and GloVe
- Oversaw 10 AI projects with social good applications from assessing bias in the justice system using the COMPAS dataset to detecting pneumonia from X-ray lung scans

The Washington Post, Washington, D.C.- Software Engineering Intern — **JUNE 2021 - AUG 2021**

- Developed new editing features and maintained the primary web application that WaPo journalists use daily to write their stories with the Publishing Tools team using React, HTML/CSS, ES6 Javascript
- Updated and refactored the application code base by removing Recompose and using modern React Hooks and ES6 features
- Conducted user interviews with Publishing Tools Senior Product Manager to identify inefficiencies and improvements to newsroom applications and presented research findings to Newsroom Engineering Team for their next development cycle

Projects

Computer System on Raspberry Pi — **FALL 2020**

- Built a computer shell system on a Raspberry Pi in C using bare-metal programming to read, parse, and evaluate commands, (ie. help, reboot, peek, and poke) typed by the user on a PS/2 keyboard and to display the console text on an HDMI monitor
- Wrote a keyboard driver to process the PS/2 scancodes bytes from the GPIO pins into typed characters
- Improved multi-processing concurrency using falling-edge interrupts to read the keyboard input into ring buffer queue
- Implemented a graphics library to draw the text pixels on the display using a double framebuffer for smooth transitions

News Feed Search Engine — **SPRING 2021**

- Developed a news search engine that downloads RSS news feed and filters through the respective HTML news articles using multithreading and networking with mutexes, conditional variables, semaphores, and queues in C and C++
- Managed two thread pools with 72 total threads to maximize parallelism on Stanford's myth machines and concurrently schedule all the downloads, parsing and indexing of articles, searches, and other functions

Skills, Certifications, & Scholarships

Programming Languages & Hardware: HTML/CSS, Javascript ES6, React, C, C ++, Python, Tensorflow, Keras, Sci-Kit Learn, Unix/Linux, Matlab, SQL, MIT App Inventor, Ionic, Verilog, CNC Machine, Verisurf, Soldering, Circuitry, 3D Printing, Laser Cutting
Soft Skills: Spanish Native and Intermediate French; Adaptability, Project Management, Teamwork, Communication
Certifications: Autodesk Inventor Certified User, Autodesk AutoCAD Certified User, SOLIDWORKS Associates Certification
Scholarships: 2018 Questbridge Scholar, matched to Stanford with a Full Ride Scholarship; 2018 Edison Scholar, recipient of $40,000 STEM Scholarship; 2018 Chevron Incentive Fund, $5,000; 2021/2022 Hispanic Scholarship Fund Scholar