AXEL ALVARENGA

axel-ra.github.io – linkedin.com/in/aamunoz15 – github.com/axel-ra – 832-941-9672 – aalvarengamunoz@uh.edu
Open to relocate to any location in the contiguous United States

EDUCATION

Bachelor of Science in Computer Science, University of Houston — Expected December 2024

WORK EXPERIENCE

IT Intern — July 2023 - present
Borehole Seismic, LLC.
Houston, Texas

- Solved compilation error in internal Java software and modified the software to increase batch file upload limit, making a business process faster and allowing workers to focus on other tasks for full-shifts.
- Created a file logging feature in internal Java software, as well as its log parser in Python.
- Communicated with users to verify system's feature functionality and to gather user feedback.
- Developed a feature for a web application to prevent data duplication and enhance user experience using HTML, JavaScript and Ruby.
- Applied multithreaded programming to decrease code runtime.
- Sole developer of a static web page and object-oriented code to show projects' progress summary.
- Built Python scripts to scan data, create a static web page, and operate on thousands of files.
- Set up a Linux shared folder and work on a Linux virtual machine to manage files and set up automations.

RESEARCH EXPERIENCE

Undergraduate Researcher — August 2024 - present
Real-Time Systems Lab
University of Houston

- Working on Automated Object Detection focused on resource-constrained, critical systems with applications in areas like pedestrian detection and surveillance systems.

Simulation of Multi-core Real-Time System Scheduling, University of Houston — January 2024 - May 2024

- Link to paper: tinyurl.com/mry46frj.
- Applied parallel and concurrent programming -multithreading and multiprocessing- to simulate task scheduling on a three-processor system in C++, using pthread library.
- Analyzed the simulation results using R/RStudio.
- Wrote a research paper using a two-column format to report the results.

PROJECTS

Volunteer Matching Web Application, University of Houston — June 2024 - August 2024

- Led Postgres database hosting using AWS RDS.
- Designed the home page for volunteers using React, HTML, and CSS, and queried data using Django.
- Developed user registration, login, and secure password-reset features in the front-end and back-end.
- Built profile management module front-end interface and back-end implementation.

Measuring Real-Time Tasks Execution Time in VxWorks, University of Houston — January 2024 - May 2024

- Developed a kernel module in C to measure execution times of real-time tasks.
- Applied context-switching and operating systems task scheduling knowledge and systems programming.
- Calculated execution times of tasks running different Matrix Multiplication algorithms.

Music Library Web Application, University of Houston — August 2023 - December 2023

- Developed some of the API endpoints to work with a MSSQL database using Node.js.
- Led web and database hosting using AWS EC2 Linux instances.
- Collaborated with team members to create the application's data schema.

SKILLS

Programming Languages: Python, C++, Shell Scripting, SQL, JavaScript

Tools: Git, Unit testing, Linux (Ubuntu), AWS EC2 & RDS, VMWare

Other Skills: Object-Oriented Programming, Pair-programming, Software Requirements Documentation Writing