Alejandra J. Perea Rojas

Personal website: tiny.one/alejandraprj · Email: aperearojas@college.harvard.edu

Education

Harvard University — Cambridge, MA
A.B. Candidate in Computer Science with a Secondary in Physics. — May 2024
Relevant coursework: Abstraction and Design in Computation, Systems Programming and Machine Organization, Introduction to Algorithms, Electromagnetism, Applied Linear Algebra and Big Data, Mechanics, and Artificial Intelligence.

Skills

Programming: Proficient in C++, Python, OCaml, and Java.
Development: Experienced in HTML/CSS, JavaScript, PHP, React, and Flask.
Environments: Familiar with Azure, AWS, and Docker.
Data: Skilled in working with JSON, YAML, and SQL.
Language: Fluent in Spanish (native), intermediate in Mandarin Chinese, and beginner in Japanese.

Relevant Experience

TeamCore PAWS — Cambridge, MA
Software Engineer — Jun 2022-Dec 2022
Implemented a testing interface to the PAWS SMART API for improved error handling and data validation. Built data through QGIS and Python, developed JSON scripts for a suite of data, and developed a testing interface to automate testing requests to Azure.

Wildlife Conservation Society — Remote / NYC
Drones and Sensors Intern — May-Aug 2022
Created an online library using SQL and Python web scraping. Drafted a white-paper on camera trap distance sampling and related tools. Developed a Python script to automate news and scholar article processing.

C Minds — Remote / MX
Remote Summer Program at DRCLAS — Apr-Aug 2021
Worked at a women-led action tank for ethical AI in Mexico, assisted in the early stages of installing a Living Lab in Yucatan and a Diabetic Retinopathy AI-based Screening Program in Jalisco.

Relevant Projects

COMPSCI 182 - Sudoku Solver and Ghost AI — Oct-Dec 2022
Implemented a Sudoku Solver using forward checking and MRV heuristics as a CSP. Created a Ghost AI using Minimax and Alpha Beta Agents with alpha-beta pruning. Implemented value iteration and Q-learning on a variation of the Frozen Lake Environment.

COMPSCI 51 - MiniML — May 2022
Implemented an OCaml interpreter with various features, including unary and binary types, operators, conditionals, and higher-order and recursive functions, using the substitution and dynamic scoped environment models.

COMPSCI 61 - Command Shell and WeensyOS — Oct-Dec 2021
Implemented a WeensyOS kernel with features such as kernel isolation, process isolation, virtual page allocation, forking, shared memory, and overlapping virtual memory address spaces, as well as an exiting function. Also developed a shell with foreground and background commands (including the cd command), command lists, conditionals, pipelines, redirections, and the interrupt signal, while handling zombie processes.

Recent Activities

Harvard SEAS — Cambridge, MA
Systems Programming Course Assistant — Sep-Dec 2022
Facilitate college-level course of about 200 students by holding office hours and review sections weekly, covering data memory and representation, assembly, kernel, caching, shell, and process synchronization using C++.

Women in Computer Science — Cambridge, MA
DIB Advocacy Director — Aug-Dec 2022
Led initiatives to promote diversity and inclusion. Organized events to provide more resources to underrepresented groups.