Alejandra J. Perea Rojas

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Education

Harvard University — Cambridge, MA
A.B. Candidate in Computer Science; 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
- Crafted artificial data for the PAWS SMART API with Python and wrote a suite of JSON scripts for the testing framework.
- Built a testing interface to automate the execution of the testing framework in a local Docker container linked to Azure.

Wildlife Conservation Society — Remote / NYC
Drones and Sensors Intern — May-Aug 2022
- Developed an article parser and processing program with Python and search queries to help build an online database.
- Drafted a white-paper on current AI platforms for camera trap distance sampling and related tools for conservation.

C Minds — Remote / MX
Remote Summer Program at DRCLAS — Apr-Aug 2021
- Assisted in the installing an AI 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
- Developed a Sudoku Solver using forward checking and MRV heuristics as a CSP.
- Implemented a Ghost AI with Minimax Agents and Alpha Beta Agents with alpha-beta pruning.

COMPSCI 51 - MiniML — May 2022
- Built 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.
- Developed a shell in C++ 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
- Facilitated college-level course of about 200 students by holding office hours and review sections weekly.
- Covered 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.