Alejandra J. Perea Rojas

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Education

Harvard University — Cambridge, MA

- Bachelor of Arts in Computer Science; Secondary in Physics. — Anticipated: May 2024
- Relevant coursework: Algorithms, Systems Programming and Machine Organization, Abstraction and Design in Computation, Applied Linear Algebra, Probability, Electromagnetism, Mechanics, and Artificial Intelligence.

Experience

Software Engineer

TeamCore PAWS — Jun-Dec 2022, Cambridge, MA

- Improved error handling for the PAWS SMART API by programming an interface and framework that expedited the API's local deployment and set-up. Also worked with QGIS to craft in Python the large set of artificial data used for testing.
- Developed the interface with Python to handle a suite of requests in JSON form and wrote a document to detail procedures.

Drones and Sensors Intern

Wildlife Conservation Society — May-Aug 2022, Remote / NY

- Built an article processing program with Python and crafted a set of SQL queries to help develop an online database.
- Researched and drafted a white-paper to review state-of-the-art AI-based video processing and conservation-related tools.

AI Intern

C Minds through DRCLAS — Apr-Aug 2021, Remote / MX

- Interned at a women-led action tank for ethical AI through the David Rockefeller Center for Latin American Studies.
- Helped install an AI Living Lab in Yucatan and establish a Diabetic Retinopathy AI-based Screening Program in Jalisco.

Activities

Systems Course Assistant

Harvard SEAS — Sep-Dec 2022, Cambridge, MA

- 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++.

DIB Advocacy Director

Women in Computer Science — Aug-Dec 2022, Cambridge, MA

- Led initiatives to promote diversity and inclusion. Organized events to provide more resources to underrepresented groups.

Projects

COMPSCI 182 - Sudoku Solver and Ghost AI — Oct-Dec 2022

- Developed a Sudoku Solver using forward checking and MRV heuristics as a computer satisfaction problem.
- 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.

Skills

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