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 AT HARVARD UNIVERSITY Jun-Dec 2022, Cambridge, MA
- Revamped error handling for the PAWS SMART API by programming an interface that expedited testing requests.
- Worked with QGIS to craft a set of artificial data used to verify predictions of poaching trap locations.
- Developed the interface with Python to handle requests in JSON form and wrote a document to detail procedures.

Sensors Intern
WILDLIFE CONSERVATION SOCIETY May-Aug 2022, Remote / NY
- Built three article processing programs with Python and initiated a large set of SQL queries to help develop a database.
- Researched and drafted a white-paper to review state-of-the-art AI 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 Screening Program in Jalisco.

Activities

Systems Course Assistant
COMPSCI 61 AT HARVARD SEAS Sep-Dec 2022, Cambridge, MA
- Facilitated a college class of about 200 students by holding office hours and a section of about 25 students 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
- Oversaw and collaborated with 8 members on 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
- Created a Sudoku Solver using forward checking and MRV heuristics as a computer satisfaction problem.
- Developed 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 - KERNEL and SHELL Oct-Dec 2021
- Implemented a kernel, called WeensyOS, 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.
- Created a Bash 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 (3+ years) in Python and C++. Experienced (1+ years) with Go, OCaml, Java, and SQL.
- **Development:** Proficient (3+ years) in HTML/CSS. Experienced (1+ years) with PHP, JavaScript, React, and Flask.
- **Environments:** Skilled with Linux, x86 Assembly, Azure, AWS, Docker, and MATLAB.
- **Language:** Fluent in Spanish (native), intermediate in Mandarin Chinese, and elementary in Japanese.