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 Jun-Dec 2022, Cambridge, MA
- Revamped error handling for the PAWS SMART API by programming an interface that expedited testing requests.
- Crafted artificial data in QGIS to verify predictions of poaching trap locations and developed the interface with Python to handle HTTP requests. Detailed procedures in the API's deployment guide.

Sensors Intern
WILDLIFE CONSERVATION SOCIETY May-Aug 2022, Remote / NY
- Developed a large set of queries in SQL and built an article processing interface with Python to deploy a virtual library.
- Researched and drafted a white-paper to review state-of-the-art AI video processing and other 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 a Systems course 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 and 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.