# 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

**Software Engineer** 

Cambridge, MA

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

# **Systems Programming Course Assistant**

Cambridge, MA

#### Systems I rogramming 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.