# Alejandra J. Perea Rojas

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## Education

**Harvard University** — Cambridge, MA
A.B. Candidate in Computer Science with a 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
Implemented a testing interface to the PAWS SMART API for improved error handling and data validation. Built data through QGIS and Python, developed JSON scripts for a suite of data, and developed a testing interface to automate testing requests to Azure.

**Wildlife Conservation Society** — Remote / NYC
**Drones and Sensors Intern** — May-Aug 2022
Created an online library using SQL and Python web scraping. Wrote a white-paper on camera trap distance sampling and related tools. Developed a Python script to automate news and scholar article processing.

**C Minds** — Remote / MX
**Remote Summer Program at DRCLAS** — Apr-Aug 2021
Worked at a women-led action tank for ethical AI in Mexico, assisted in the early stages of installing a 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
Implemented a Sudoku Solver using forward checking and MRV heuristics as a CSP. Created a Ghost AI using Minimax and Alpha Beta Agents with alpha-beta pruning. Implemented value iteration and Q-learning on a variation of the Frozen Lake Environment.

**COMPSCI 51 - MiniML** — May 2022
Implemented 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. Also developed a shell 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
Facilitate college-level course of about 200 students by holding office hours and review sections weekly, covering 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.