Lorenzo Mendoza

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EDUCATION

University of Rochester — Rochester, NY
Bachelor in Computer Science, Minor in Physics — Expected: May 2025
Relevant coursework: Computer Organization, End-to-End Deep Learning, Machine Learning, Data Mining, Design & Analysis Efficient Algorithms, Data Structure & Algorithms

SKILLS

Programming: Python, Java, C/C++, JavaScript, Bash, HTML, R
Tools: Linux/Unix, Git, VS Code, TensorFlow, PyTorch, Scikit, OpenCV, SciPy, Docker, Jupyter Notebooks, Markdown, LaTeX

SOFTWARE ENGINEERING EXPERIENCE

KLab - *Undergraduate Research Assistant* | Rochester, NY — Aug 2023 – Present
- Identified biases in racial recognition datasets through comprehensive examination using *cleanlab* for image quality assessment and manual inspection for racial classification accuracy.
- Compared performances of bias mitigation techniques in in DNNs on race datasets using GPU-accelerated computation & distributed training
- Co-authored a research paper on algorithmic fairness in machine learning with fellow researchers and professors

Flash Center for Computational Science - *Software Engineer Intern* | Rochester, NY — Jan 2023 – Aug 2023
- Developed MacroOptimizer, a tool for automated macro handling in fluid-dynamic simulations
- Integrated tools into software resulting in performance by approximately 50% on GPU and CPU execution
- Collaborated with developers using Docker, Kubernetes, C++, Python, & code reviews to optimize performance

University of Rochester CS Dept - *Teaching Assistant (CSC 171, 172)* | Rochester, NY — Jan 2023 – Jan 2024
- Taught a group of 50 students in fundamental programming and advanced data structures & algorithms, with emphasis on algorithmic thinking and computational problem solving
- Curated comprehensive educational guides tailored to students' needs, covering assignments and learning materials.
- Utilized Bash Scripting to develop grading tools for assignments and provided constructive feedback to each student

DESI UR - *Software Engineer Intern* | Rochester, NY — Aug 2022 – Jan 2023
- Engineered CatalogComparer for efficient analysis of cosmic void detection algorithms in large 3-D galaxy surveys.
- Optimized previous editions of the software by 2x by introducing code optimizations, machine-learning data structure, and Cython objects to partition 2,000,000+ point datasets

SOFTWARE ENGINEERING PROJECTS

StudentCLI | *C++, Bash* — Source
- Built open-source command-line interface for student assignment management, featuring grading and assignment management using Bash scripts
- Assignment management streamlined with user-friendly interface, reducing grading time by 70% for educators
- Implemented the project in C++ and utilized CMake as the build system, ensuring cross-platform compatibility

Handwritten Digit Recognition App | *JavaScript, Python, HTML* — Source
- Created a frontend for app using JavaScript and HTML to showcase a drawing canvas and real time predictions
- Achieved 98% accuracy on the MNIST dataset by training, fine-tuning, and saving neural network via Tensorflow
- Integrated TensorFlow.js API to efficiently load the pre-trained model in the browser, enabling users to draw digits and receive predictions of 99% average confidence rate

LEADERSHIP & AFFILIATIONS

Center for Community Alternatives | Volunteer / Advocate | Rochester — Jan 2023 – Present
CodePath | Community Member / Mentor | Remote — June 2022 – Present
Kearns Center | Scholar / Mentor | Rochester — Spring 2022 – Dec 2022