

Ezra Boldizar

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Education

Carnegie Mellon University (2020-2024)

Double Major: Statistics & Machine Learning, Philosophy **Minor:** Computer Science **GPA:** 3.6

Honors: Dietrich University Honors, Senior Leadership Award, Dean's List w/ High Honors

Relevant Coursework: Generative AI, Usable Privacy & Security, Natural Language Processing, Database Systems, Parallel & Sequential Data Structures & Algorithms, Adv. Methods for Data Analysis, Computer Systems, Intro to Machine Learning, Modern Regression, Statistical Graphics & Visualizations, Statistical Computing, Functional Programming

Technologies/Expertise

Python (PyTorch, Pandas, Flask, NumPy, HuggingFace), Javascript/Typescript (React, RxJS, Moment, Jest, Node), Ruby (Rails), C, C++, R (Tidyverse), SML, SQL, Git, HTML/CSS, MongoDB, Grafana, AWS, Vercel

Experience

Lead Teaching Assistant – Principles of Computing – Carnegie Mellon University – 08.22-05.24

Pittsburgh - Python, Pandas, NumPy

- Create rubrics, recitation plans, practice problems in addition to recitations and office hours
- Communicate with ~30 TA staff to organize grading, staff meetings, and other course logistics
- Interface directly with the course professors to improve course outcomes for ~300 students per semester

Software Engineering Intern – Screenshot – 05.23-08.23

Chicago - Ruby on Rails, React, Typescript, Sqlite, AWS

- Multiple commits in production for large Ruby on Rails and React code bases in Agile environment
- Integrated and created both backend APIs and React components
- Implemented automated tests using RSpec and Jest, ensuring software reliability and reducing manual testing efforts
- Contributed to discussions on new features' architecture and implementation details

Software Engineering Intern – CSL Behring – 05.22-08.22

Remote - Python, Flask, MongoDB, AWS, Grafana

- Created a dashboard for analyzing wearable device data utilizing a variety of health APIs
- Stood up EC2 instance with Flask to accept webhooks
- Configured MongoDB database and wrote queries for use in a Grafana dashboard

Teaching Assistant – Principles of Computing – Carnegie Mellon University – 08.21-05.22

Pittsburgh - Python, Pandas, NumPy

- Led recitations, held office hours, held ~80 person review sessions, grading, code reviews
 - Understanding of: computational principles in problem-solving, abstraction in computing, classification of computational problems based on complexity, data analysis in python, etc.
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Projects

15-112 AI Teaching Assistant — Fine-tuned a variety of open-source LLMs including Llama3 using LoRA to create more helpful and instructive answers to student questions, augmented with RAG and ELO-based human evaluation

Prompt2Prompt — Implemented text-based generative image editing that preserves the elements of the original image in PyTorch

Bustub - A Relational Database Management System — Created key features of a DBMS including a buffer pool manager, extendible hash index, and concurrent query executor using C++

RoPE & Grouped Query Attention — Added Rotary Position Embeddings and GQA to minGPT to generate Shakespeare using PyTorch

Question Generation & Answering System — Implemented system that answered/generated questions from a Wikipedia article using a homemade neural net built with PyTorch and a variety of HuggingFace models

C0VM Virtual Machine — Created string parser using stacks to translate C0 (a reduced version of C) into runnable C code.