Jacob Hanson-Regalado

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EXPERIENCE

Visual Design and Engineering Lab at Carnegie Mellon University

Research Assistant | April 2020 - present

- Implement deep learning solutions for interdisciplinary and engineering problems.
- Built a CNN model for acoustic classification, and currently working on engineering diagram understanding.
- Use Python, PyTorch, SciPy, and Scikit-Learn.

Self-Employed

Freelance Web Developer | September 2018 - present

- Build modern, maintainable, and beautiful websites for various local organizations/artists.
- Work with a variety of technologies including JavaScript, React, jQuery, Nginx, Flask, and SQL.
- Built websites such as tjef.org, chars-hotdogs.com, and dvhackers.com.

Diablo Valley College

Computer Science Tutor | September 2019 – May 2020

- Tutored DVC students in C++, Java, and MASM.
- Practiced creative problem solving, effective communication skills, and programming best practices.

Physics Institute of Heidelberg

Research Intern | July 2018 - August 2018

- Created various experiments having to do with classical optics and observed official experiments in the Institute.
- Performed data analysis on results and built an image capturing module, using Python, NumPy, and Pandas.
- Part of a larger program hosted by the International Summer School of Science (ish-heidelberg.de).

PROJECTS

JCNN

Convolutional Neural Network | try it here!

- Efficient implementation of a convolutional neural network including both back and forward propagation.
- Interactive demonstration website where users can hand-draw digits and have them classified by a trained model.
- Built from scratch with Python using NumPy, and Flask.

NeuroCars

Self-driving Car Simulation | try it here!

- 2D self-driving car simulation demonstrating neuroevolution in the browser.
- Agents in the simulation use neural networks to navigate tracks, and iteratively evolve using the genetic algorithm.
- Built with JavaScript using Planck.js for collision detection and ray casting.

Sorting Visualizer

Educational App | try it here!

- Educational tool showing the individual steps of sorting algorithms in a visually pleasing way.
- Users can select various algorithms, pause, fast-forward, restart, and adjust the size/speed of the animation.
- Sorting algorithms included: Heap Sort, Merge Sort, Quick Sort, Radix Sort, Selection Sort, and Bubble Sort.

CashOut

Crowdsource ATM App | DVCHacks 2019 Winner | see the source code here!

- Led a team to develop a website where users can post offers to exchange cash for an online money transaction.
- Flask API implementation, handlebars.js front-end templating, SQLite with SQLAlchemy.

EDUCATION

University of California, Berkeley

- Major – Electrical Engineering & Computer Science, with an emphasis on Computer Science.
- Estimated Graduation Date – Spring 2022
- GPA – 4.0/4.0

SKILLS

Python ◆ C++ ◆ HTML&CSS ◆ JavaScript ◆ Java ◆ SQL
PyTorch ◆ SciPy ◆ Keras ◆ React ◆ jQuery ◆ Git