Jacob Hanson-Regalado

✉ jhanreg11@gmail.com   ⌂ jacob-hanson.com   ☏ 707-934-7532   ⦿ github.com/jhanreg11

EXPERIENCE

Visual Design and Engineering Lab at Carnegie Mellon University
Research Assistant | April 2020 - present
- Implement deep learning solutions to problems mainly within the field of additive manufacturing.
- Built a CNN model that classifies flaws within a 3D printing process using audio samples.
- Currently creating an algorithm to develop abstract knowledge of engineering components from images.
- Use transfer learning, semantic segmentation, graph neural networks, PyTorch, Python, and SciPy.

UC Berkeley Law School
Full-Stack Web Developer | August 2020 – present
- Implement the redesign of the Statewide Redistricting Database website on the front/back end.
- Translate Figma designs for the dataset search/download portal into web pages using Angular and TypeScript.
- Design data models and implement business logic exposed via API in Django and Python.

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.

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.

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 ◆ Angular ◆ Git