Jakob Hild

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SKILLS

PHP, HTML, JavaScript, node.js, Python, Java, SQL, Github/Git, Bash, Flask, Express.js, Deploying VMs, Wireshark, Adobe Acrobat, Microsoft Skills

Projects

Personal Website - jchild.net

2018 - PRESENT

- This website is run using Flask in Python. I made heavy use of HTML templating with Jinja to make adding new pages and games easier.
- The main page is a small game in which you can spray clouds with a water gun by pressing the mouse buttons, movement is controlled with the "WASD" keys. It starts on the pause screen so you can directly click links to other pages instead.
- I included a thoughts page which has links to a sorting algorithm viewer with explanations for each type of sort, a particle generator, a flow field algorithm, and a left-hand notation calculator that has a short explanation of it as well.
- I also included a games page with simple games I remade like tic-tac-toe and flappy bird. All of the games use P5.JS for graphics.

Senior Project - AI Music Generator

2020 - 2021

- This was a website I hosted using NearlyFreeSpeech. I used node.js for the backend so I could generate a midi file that could be saved or downloaded.
- I used a Generative Adversarial Network (GAN) that I trained with classical music, jazz, and rock to generate new midi based off of some midi that the user input into the website.
- The application is still available but the GAN only worked with node.js and my website is static, so I had to reform the generative code to a set of hard coded JavaScript functions and remove the ability to download the music; however, you can still listen to the generated music.

EXPERIENCE

Freelance Tutoring, Online - *Computer Science Instructor*

May 2020 - PRESENT

- Offers courses for high schoolers and college students in subjects such as web development/design, programming, software engineering, etc.
- Designs assignments and projects for students to complete based on a predetermined curriculum personalized for each student.
- Implements skills learned at Mount St. Mary's to create an enjoyable learning experience for clients who have a variety of different levels of understanding of computer science.

Mount St. Mary's University, Emmitsburg, MD - *Peer Tutor, Computer Science Department*

JANUARY 2019 - MAY 2021

- Aids classmates in giving them a better understanding of the material taught in their courses.
- Applies different styles of teaching to assist students at different levels of understanding to excel in their coursework.
- Assists with courses such as Intro to Computer Science 1 and 2, Computer Graphics, Network Systems and Design, Algorithms, and Intro to AI.
- Manages a concise schedule among students to ensure that they can meet to discuss assignments as often as they need to.

Johns Hopkins Hospital, Baltimore, MD - *IT CTS Assistant*

MAY 2019 - AUGUST 2019

- Used software such as VPSX and Bomgar to remote into computers and solve technical issues.
- Pinpointed hardware problems in electrical devices and troubleshot/repaired said devices.
- Helped to maintain a positive environment among employees and patients of the hospital.

Mount St. Mary's University, Emmitsburg, MD - *Recreation Facility Assistant*

SEPTEMBER 2017 - MAY 2018

- Assisted supervisor in checking and retaining IDs when students and locals wanted to use the facilities.
- Maintained cleanliness in the workplace and kept equipment tidy.
- Answered phones and set up/kept track of scheduled appointments for customers to use specific rooms and/or equipment within the facility.
- Provided excellent customer service.

EDUCATION

Mount St. Mary's University, Emmitsburg, MD - *Computer Science Major, Data Science Minor*

AUGUST 2017 - MAY 2021

This is a list of some of my favorite courses.

- **CMSCI 256** - Software Development - This class dives deep into HTML, CSS, JavaScript, PHP, and introduces us to using Android-Studio which is used for creating applications on Android Devices.
- **CMSCI 442** - Principles of Programming Languages - This went through a large list of Programming Languages that we would study one language per week and we would write a functional program using each language. Languages included Rust, Go, Node.js, Ruby, Swift, and Standard ML of NJ.
- **CMSCI 449** - Intro to AI - Programming in Python, we discussed several algorithms like Heuristic Informed Searches like USC, GBF, AStar, HillClimbing, and Annealing. First thing we talked about to get there was Breadth First Searching and Depth First searches as well as Depth Limited Searches. Then we talked about MinMax Algorithms and Genetic Algorithms that would play with text. Lastly we programmed a perceptron that would be the basis of coding our final project which would be a Neural Net with a few layers of perceptrons.

Certifications

- CRLA International Tutor Training Program, Level I
- Plans to obtain Security+