



DAVEN CHANG

University of Maryland College Park
B.S. in CS/ML
GPA: 3.95

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SUMMARY

Passionate about software development and machine learning, particularly focused on Generative/Reinforcement ML. Extensive Python proficiency gained through numerous impactful personal projects. Adaptable to various programming languages. A collaborative team player with a strong work ethic and an innate curiosity.

SKILLS

Languages: Python, Java, C, R, HTML, CSS, Javascript, Ocaml, Bash, MIPS Assembly.

Technologies: VSCode, Git, Linux, Unix, Numpy, Pandas, Tensorflow, Keras, OpenCV, PyTorch, Matplotlib, Mediapipe, Flask, Typing.

EDUCATION

8/2023 - 5/2027	CS/ML @ University of Maryland College Park	School
	Undergraduate researcher in the FIRE research program in Sustainability Analytics.	

EXPERIENCE

7/2023 - 8/2023	Inspirit AI - AI Scholar	Program
	Built cifar-10 classifiers with KNNs and CNNs . Combined NLP and DNN through LSTMs , RNNs , and transformers , to predict stock prices from news and market history.	

6/2023 - 6/2023	BWSI - COGWORKS	Program
	Completed course on Autonomous Cognitive Assistants. Learned version control with Git, and advanced knowledge of Python and NLP techniques.	

PROJECTS

Finance/ Automation	BandMaker	https://github.com/daven-c/BandMaker
	Developed a Python program for day trading technical analysis. Created a discord bot for commands, graphs, and notifications. Integrated an SQL database to store a user's tracked tickers. Developed an algorithm combining candlestick patterns , support/resistance levels , and moving averages from API data to identify bullish and bearish trends. Merged web scrapers and sentiment analysis for news-based ratings. Currently exploring transformer/deep learning alternatives to pattern-matching algorithms.	

Computer Vision	Helping Hands	https://devpost.com/software/helpinghands-myl8ox
	Crafted a Python application leveraging the power of computer vision to precisely track hand movements through a regular webcam . Empowers users to remotely control mouse actions such as moving, clicking, and scrolling by intuitively gesturing with their hands and fingers. Incorporated smoothing algorithms to ensure seamless and jitter-free mouse movements. Implemented using Python, mediapipe, cv2, numpy, and pyautogui.	

Website	davenc.dev	https://davenc.dev
	Constructed a website from the ground up , acquiring proficiency in HTML , CSS , and JavaScript . Integrated with a Google Domain and DDNS to maintain a personal VPN . Gained insights into networking essentials, encompassing DNS, IP addresses, and HTTP/TCP protocols. Plans include the integration of Node.js and other frameworks.	

Gen AI	DigitGAN	https://github.com/daven-c/DigitGAN
	Created, trained, and fine-tuned GANs in pytorch capable of generating images of numbers similar to the MNIST dataset. Initially utilized a Deep Neural Network , but improved with an upscaling Convolutional Neural Network for sharper resolutions.	

Classifier	Digit Classifier	https://davenc.dev
	Created, trained, and fine-tuned a Convolutional Neural Network with Keras to classify a digit drawn on a grid-based UI built with Pygame . Incorporated a system of easily saving and loading the best models.	

Algorithms	A Star Visualizer	https://github.com/daven-c/A-Star-Visualizer
	Designed a grid-based visualizer with the ability to place obstacles on a dynamic board featuring customizable start and end tiles. Upon execution, the program navigates through obstacles, employing A Star pathfinding algorithm to determine the optimal route from the designated start tile to the endpoint.	

COURSEWORK

- Intro to Object Oriented Programming I/II, Data Structures and Algorithms, Intro to Computer Systems, Discrete Structures, Organization of Programming Languages, Algorithms, Calculus I/II, Linear Algebra.