Dav Vrat Chadha

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Education

UNIVERSITY OF TORONTO

Bachelor of Applied Science in Engineering Science

Sep 2020 – Apr 2024

Toronto, ON, Canada

- Machine Intelligence Major
- PEY Co-op Student

Relevant Coursework

UNDERGRADUATE

Data Structures & Algorithms
Digital & Computer Systems
Linear Algebra
Introduction to Machine Learning
Foundations of Computing

Skills & Tools

PROGRAMMING

Python • NumPy • Sklearn • Pandas • CircuitPython • C/C++ • Java • HTML • CSS • JavaScript • MySQL • MATLAB • Git • Verilog • ARM Assembly

Awards & Honors

DEAN'S HONOR LIST

University of Toronto

SKULEPEDIA HACKATHON – 2ND PLACE

University of Toronto

Researched and wrote an article about Skule history, with a team interested in protecting and preserving the history and old traditions of UofT engineering.

Extra-Curricular

COMPUTER TECHNICIAN

May 2022 – July 2022

- Helped senior citizens in my neighborhood troubleshoot and fix software and hardware issues in their computers.
- Made the process of getting computers fixed easier for them by removing the technological barrier between them and the customer service executive
- Helped senior citizens learn about new useful features in their computers related to accessibility needs

PYTHON TUTOR

Jan 2021 - Apr 2022

- Tutored a first-year Civil engineering student about the basics of Python
- Concepts taught ranged from simple list manipulations to using NumPy and Pandas library, based on course requirement.

Projects

WALLSTREETBOTS

Sept 2022 - Current

- Developer in a team in UTMIST: University of Toronto Machine Intelligence Student Team, working on WallStreetBots
- WallStreetBots is a web platform to deploy and monitor **machine learning** algorithms like **CNN**, **LSTM**, and **SVM**s, for stock and cryptocurrency trading.
- Designing **NLP** sentiment indicators and **deep learning models** to predict the cryptocurrency price.
- Previous models achieved 66.2% accuracy for trend prediction on next day opening prices, and 61.8% accuracy on next day closing prices for stocks.

WEB DEVELOPMENT: WEBSITE - davvratchadha.com

Aug 2022

- Designed my website from scratch, to be used as my portfolio
- Developed an easy and simple-to-use **UX design** in **HTML5**, **CSS**, and **JavaScript**

PARALLELOOM - Presentation

Jan 2022 – Apr 2022

- Led a team of 6 people to design and build a loom to weave bamboo strips into braids, used to make handicraft items, to aid a community of old ladies in Thailand
- Designed a 3D prototype for the loom in **Fusion360 CAD**, which led to fast and easy development of the project
- Developed a program with **CircuitPython** to run prototype with **Raspberry Pi** and **embedded circuits**.

SEAM CARVER

Mar 2021

- Developed a program in **C** to resize images using the technique of seam carving
- The program utilizes a dual-gradient energy function with **dynamic programming** to eliminate the lowest energy dynamic vertical seams to decrease the size of an image
- The resized image has minimal distortion compared to the image scaling method, and the program avoids the removal of important content.

TEXT AUTOCOMPLETER

Feb 2021

- Created a fast predictive text application in **C** that auto-completes users' words
- Applied sorting algorithms by weight with binary search to output the predicted word from a given file of terms

SEMANTIC SIMILARITY - SYNONYM TESTER

Dec 2020

- Used Swann's Way, and War and Peace to create semantic descriptors, by listing each word in the texts with all other words used in the same sentence to get a context of where a particular word is used.
- Developed a **Python** program to apply the euclidean norm and cosine similarity function on the input word and three other words in the semantic descriptors to calculate and return a similarity score between them.
- Program returns the results with a 65% accuracy rate

Other Course Experience

PH526X: USING PYTHON FOR RESEARCH [ONLINE]

May 2020 – June 2020

HARVARD UNIVERSITY, USA Certificate