Dav Vrat Chadha

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Education

UNIVERSITY OF TORONTO

Bachelor of Applied Science in Engineering Science

Sep 2020 – Apr 2025

Toronto, ON, Canada

- Machine Intelligence Major
- PEY Co-op Student

Relevant Coursework

UNDERGRADUATE

Introduction to Machine Learning
Natural Language Computating
Artificial Intelligence
Data Structures & Algorithms
Digital & Computer Systems

Skills & Tools

PROGRAMMING

Python • Sklearn • Keras • Objax • spaCy • Tensorflow • Jax • PyTorch • NumPy • CircuitPython • Linux • C/C++ • Java • HTML • CSS • JavaScript • MySQL • MATLAB • Git • Verilog • ARM Assembly

Awards & Honours

DEAN'S HONOUR 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 requirements.

Projects

POLITICAL PERSUASION CLASSIFICATION FROM SOCIAL MEDIA CORPUS

Jan 2023

- Worked with a social media corpus of Reddit posts and gained experience in **Python** programming and **computational linguistics**.
- Implemented **part-of-speech (PoS) tagging** and **sentiment analysis** on the posts using the **re** and **spaCy** library.
- Split the posts into sentences and gathered feature information for each post.
- Utilized **machine learning** with **scikit-learn** to learn and classify the political persuasion of the posts.

WHY SO PUNNY?

Jan 2023 - Current

- Working in a team to create one of the largest datasets of puns and their explanations, each sentence tagged using a new tagging scheme.
- Utilizing an ensemble of **transformer**-based models **DeBERTa** and **RoBERTa** to detect and locate puns.
- Fine-tuning **natural language inference** model **InferNet** to generate explanation for why the pun is funny.
- Building upon the recent research done by Amazon to improve the existing methods.

WALLSTREETBOTS

Sept 2022 - Current

- Developer in UTMIST: University of Toronto Machine Intelligence Student Team, working on WallStreetBots.
- Web platform to deploy and monitor **machine learning** algorithms like **Hidden Markov Model**, **multi-variable LSTMs**, 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 - davvratchadha.com

Aug 2022

- Designed my portfolio website.
- Developed an easy and simple-to-use **UX design** in **HTML5**, **CSS**, and **JavaScript**.

PARALLELOOM - youtube.com/watch?v=wu3rYk73sKk

Jan 2022 – Apr 2022

- Led a team of 6 to design and build a custom bamboo-weaving loom used to make handicraft items, to aid a community of elderly in Thailand.
- Designed the 3D model in **Fusion360**, which led to the fast and easy development of the project.
- Developed a program in **CircuitPython** to run the prototype with **Raspberry Pi** and **embedded circuits**.

Miscellaneous

VOLUNTEER - GBF COMMUNITY SERVICES

Oct 2019 - Aug 2020 Grimsby, ON, Canada

- Streamlined the process of collecting, sorting, and distributing the donations into their respective sections.
- Led to a decrease in processing time and an increase in the work efficiency at the facility.