

DAV VRAT CHADHA

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Engineering Science student with 4+ years of experience designing and programming applications in Python, Java, C, HTML, and MySQL. 2+ months of experience with CSS and JavaScript. Student enrolled in PEY Co-op program.

EDUCATION

SEPTEMBER 2020 – APRIL 2025

BACHELOR OF APPLIED SCIENCE IN ENGINEERING SCIENCE

UNIVERSITY OF TORONTO, CANADA

PEY Co-op Student

PROFESSIONAL SKILLS

- Time management
- Ability to work under pressure
- Good Communication
- Collaboration & Teamwork
- Adaptability
- Innovative Thinking

TECHNICAL SKILLS

- Python
- Java
- C
- HTML
- JavaScript
- MySQL
- MATLAB
- CSS

PROJECTS

WEBSITE (JULY 2022 – AUGUST 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**.
- Check here: <https://www.davvratchadha.com/>

PARALLELOOM (JANUARY 2022 – APRIL 2022)

- Designed a prototype for the loom in **Fusion360 CAD**.
- Developed the program with **CircuitPython** to run prototype with **Raspberry Pi**.
- Presented the prototype to a live audience. Check here: <https://youtu.be/wu3rYk73sKk>

SEAM CARVER (FEBRUARY 2021 – MARCH 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.

AUTOCOMPLETER (JANUARY 2021 – FEBRUARY 2021)

- Created a fast predictive text application in **C** that autocompletes user's words.
- Applied sorting algorithms with binary search to output the predicted word from a given file of terms.

SEMANTIC SIMILARITY - SYNONYM TESTER (NOVEMBER 2020 – DECEMBER 2020)

- Developed a **Python AI** to calculate word similarities between a given word and three other words and return a synonym score for an entire list.
- Used Swann's Way by Marcel Proust, and War and Peace by Leo Tolstoy, 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.
- Applied Euclidean norm and cosine similarity function to calculate the similarity score.

GOMOKU (OCTOBER 2020 – NOVEMBER 2020)

- Created a **Python** implementation of the classic board game Gomoku.
- It is a Player v. Computer game where an ASCII-art board is displayed upon each move.

AVENGERS MONOPOLY (MAY 2020 – JUNE 2020)

- Developed an Avenger's edition Monopoly game in **Python**.
- Created ASCII-art generator for the board, houses, hotels, and customized chance and treasure chests cards, to improve the game experience for the players.

COURSE EXPERIENCE

PH526X: USING PYTHON FOR RESEARCH (MAY 2020 – JUNE 2020)

HARVARD UNIVERSITY, USA (ONLINE) CERTIFICATE

EXTRA-CURRICULAR

TROUBLESHOOTING AND FIXING COMPUTERS (MAY 2022 – JULY 2022)

GRIMSBY, CANADA

- Helped senior citizens in my neighborhood by troubleshooting and fixing 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.

VOLUNTARY TUTOR FOR PYTHON (JANUARY 2021 – APRIL 2022)

TORONTO, CANADA

- Tutored a first-year Civil engineering student about the basics of Python.

VOLUNTEER, GBF COMMUNITY SERVICES (OCTOBER 2019 – AUGUST 2021)

GRIMSBY, CANADA

- Organized, segregated, and distributed donated items to various sections of the facility with unique techniques.
- Lead to a decrease in processing time and increase in work efficiency of the facility.

ACADEMIC TUTOR (OCTOBER 2019 – JUNE 2021)

GRIMSBY, CANADA

- Tutored high school students for SCH4U, SPH4U, MCV4U, and MHF4U (science and arithmetic) courses.

VIRTUAL VOLUNTEER, CHILD RIGHTS & YOU (JUNE 2018 – SEPTEMBER 2019)

INDIA

- Planned, coordinated, and conducted an online fundraiser to raise money for education of poor children in India, who have little/negligible access to education.

AWARDS & HONOURS

SKULEPEDIA HACKATHON – 2ND PLACE (FALL 2021)

UNIVERSITY OF TORONTO

- Researched and wrote an article about Skule history, with a team of people in interest of protecting and preserving the history and old traditions of UofT Engineering.