

DAV VRAT CHADHA

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<https://github.com/DavVratChadha>

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

SEPTEMBER 2019 – JUNE 2020

HIGH SCHOOL

BLESSED TRINITY CSS, GRIMSBY, CANADA

APRIL 2016 – SEPTEMBER 2019

HIGH SCHOOL

MAYOR WORLD SCHOOL, JALANDHAR, INDIA

PROFESSIONAL SKILLS

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

TECHNICAL SKILLS

- Python
- Java
- C
- MATLAB
- MySQL
- HTML
- CSS
- JavaScript
- Tech Savvy
- ARM Assembly
- Machine Learning
- CircuitPython

PROJECTS

JULY 2022 – CURRENT

WEBSITE

Designing and programming my own website to be used as my portfolio. Programming in HTML5 with CSS and JavaScript to create an easy and simple-to-use UX design.

JANUARY 2022 – APRIL 2022

PARALLELOOM

Paralleloom is a semi-automatic loom for weaving bamboo strips into braids, created to assist a community of old weaver ladies in Thailand, by reducing health hazards, improving ergonomics, and increasing efficiency and weaves consistency, all while preserving their culture and heritage. Designed and improved the prototype in Fusion360 CAD. Wrote the program for the prototype with CircuitPython library to run it on Raspberry Pi Pico integrated circuit. Presented the prototype to a live audience.

Check Here: <https://youtu.be/wu3rYk73sKk>

FEBRUARY 2021 – MARCH 2021

SEAM CARVER

Created a program in C to resize images using the technique of Seam Carving. The program utilizes a dual-gradient energy function to calculate the energy at each pixel of the image and then uses dynamic programming to find and eliminate the lowest energy dynamic vertical seams to decrease the size of an image.

JANUARY 2021 – FEBRUARY 2021

AUTOCOMPLETER

Created a C implementation of a fast predictive text application that autocompletes the word the user is typing based upon the characters already typed as the string input. To achieve this, the program reads an entire file of terms, sorts them in lexicographic order, uses binary search to find all terms in the ordering that matches the query, and then presents them to the user after sorting them by weight.

NOVEMBER 2020 – DECEMBER 2020

SEMANTIC SIMILARITY - SYNONYM TESTER

Created a Python AI to calculate word similarities between a given word and three other words, and return a score of similarity (synonym score) for an entire list. For this, the program uses two long pieces of literature, 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. To check the similarity between given words, the Euclidean norm and cosine similarity function are used for this program.

OCTOBER 2020 – NOVEMBER 2020

GOMOKU

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

MAY 2020 – JUNE 2020

AVENGERS MONOPOLY

Created an Avenger's edition Monopoly game programmed in Python. It is a text-based game with ASCII-art of board, houses, hotels, and customized chance and treasure chests cards, which improve the game experience for the player. It is a fast version of Monopoly, and the rules of the game are similar to the classic Monopoly.

FEBRUARY 2020 – FEBRUARY 2020

BLACKJACK

Created a Python version of the classic casino game Blackjack. It is a PvC (Player v. Computer) game where the computer is the dealer. The player starts with \$500 and can play any number of rounds until they lose all money, and must reset their bankroll, or cash out at any point. The program also contains a function to create and display the cards as ASCII-art and improve the overall player experience.

COURSE EXPERIENCE

MAY 2020 – JUNE 2020

PH526X: USING PYTHON FOR RESEARCH,

HARVARD UNIVERSITY, USA

Online

Certificate

EXTRA-CURRICULAR

MAY 2022 – JULY 2022

TROUBLESHOOTING AND FIXING COMPUTERS

GRIMSBY, CANADA

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

JANUARY 2021 – APRIL 2022

VOLUNTARY TUTOR FOR PYTHON

TORONTO, CANADA

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

OCTOBER 2021 – PRESENT

MEMBER OF GOOGLE DEVELOPER STUDENT CLUB, UTSG

TORONTO, CANADA

Member of the Google Developer Student Club (GDSC), University of Toronto.

OCTOBER 2019 – AUGUST 2021

VOLUNTEER, GBF COMMUNITY SERVICES

GRIMSBY, CANADA

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

OCTOBER 2019 – JUNE 2021

ACADEMIC TUTOR

GRIMSBY, CANADA

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

JUNE 2018 – SEPTEMBER 2019

VIRTUAL VOLUNTEER, CHILD RIGHTS & YOU

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

FALL 2020

DEAN'S HONOUR LIST

UNIVERSITY OF TORONTO

FALL 2020

FACULTY OF APPLIED SCIENCE & ENGINEERING AWARD - \$2000

UNIVERSITY OF TORONTO

FALL 2020

FACULTY OF APPLIED SCIENCE & ENGINEERING SCHOLARSHIP - \$2000

UNIVERSITY OF TORONTO