Yash A. Bhavsar

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Education

McMaster University *Expected Graduation, May 2024*
B.Eng. in Electrical Engineering, GPA 3.4/4.0 *Hamilton, ON*

Technical Skills

Programming Languages: C/C++ • Python (tkinter, matplotlib, numpy) • JavaScript • Verilog • MATLAB • R
Web Development: HTML • CSS • React.js • Node.js • Bootstrap
Platforms: VSCode • Eclipse IDE • Github • Jupyter Notebook
Software: MS Office • Altera Quartus II • Keil uVision 5 • LTspice • Waveforms • Realterm

Experience

Technical Representative *July – September 2022*
Grey-Bruce Telecoms *Owen Sound, ON*

- Identified and solved variety of client issues involving hardware (router, PoE, CPE, towers) and cable misuse/faultiness
- Initialized wireless and fibre connections on administrative side by accessing IP addresses and connecting to local towers
- Provided accurate information to clients of the feasibility of a secure wi-fi connection at their residence

Data Entry Clerk *May – July 2022*
TJX Companies Inc. *Brampton, ON*

- Created, organized, and transferred information from paper documents onto database systems
- Routinely created **Excel**-based reports quantifying production and quality of barcodes

Projects

Calculator Application | *Self-Taught* *December 2022*

- Successfully designed a **React**-based calculator App using **HTML/CSS**, and **JavaScript**
- Implemented various math functions using the **mathjs** library and utilized **state management** with the useState hook
- Applied **OOP** principles and **Bootstrap** to organize and structure the code and enhance the user interface

Collatz Conjecture Visualizer | *Self-Taught* *December 2022*

- Created a professional and visually appealing **graphical user interface** using **Tkinter** and **PIL** libraries
- Developed various visualizations of the Collatz Conjecture in **Python** using **matplotlib** and **numpy**
- Adhered to **event handling**, **input validation**, and **modular design** principles to enhance the functionality of the program

Lidar-Based 3D Hallway Mapper | *Self-Taught* *March – April 2022*

- Developed a **C** program for configuring **digital I/O** and **I2C** on a microcontroller and reading LiDAR sensor data
- Created **Python** script for **visualizing data** from microcontroller through **UART** and **matplotlib**, including data storage, organization options, and 3D scatter plot visualization
- Improved user controls for starting/stopping the program and providing feedback built-in LEDs

Automated System for Sterilizing Surgical Tools | *Coordinator, Python Developer* *Winter 2021*

- Developed a sophisticated robotic arm control system using **Python**, incorporating **OOP**, **exception handling** techniques, and decision-making using EMG sensors
- Enhanced the functionality to allow for precise movement and gripper/autoclave control based on inputted ID numbers

Extracurricular

Software Sub-Team Member *September 2022 – Present*
Maction Potential | *McMaster University* *Hamilton, ON*

- Applied the **Python tkinter** library to create a GUI (**UI/UX**) capable of tracking nicotine levels sent through an **Arduino**
- Executed **C** code compiled into the Arduino to control an injection needle at varying intervals

Relevant Coursework

OOP and DSA: **C++** used to create and implement **data structures** such as SLL/DLL, arrays, stacks, binary search trees, queues, and hash tables, as well as various **sorting algorithms**, all of which were assessed for time/space complexity

Circuit Testing: Design of complex circuits through breadboards and **LTspice**; Analysis done through **Waveforms**, utilizing Oscilloscopes, and manipulating input voltage