Viraj Patel

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Education

McMaster University **Sep. 2023 – April 2027**

Bachelor of Software Engineering, Co-op *Hamilton, Ontario*

- Dean's Honour List
- Relevant Coursework: Data Structures and Algorithms, Digital Systems and Interfacing, Object-Oriented Programming, Computer Architecture, Discrete Mathematics with Applications

Skills

Languages: Python, C++, C, Java, JavaScript, Verilog, Linux, SQL, HTML, CSS
Tools: Git, VS Code, PyCharm, MS Suite, Bash, Figma, MySQL
Frameworks: React.js, Node.js, Bootstrap, NumPy, Flask, Angular, Electron

Experience

Software Engineer **September 2023 - Present**

McMaster SumoBots *Hamilton, ON*

- Collaborated within a technical team to develop a fully autonomous combat robot.
- Processed and analyzed data from **Arduino**, ultrasonic, and infrared sensors by cleaning, filtering, and storing it for optimized functionality.
- Designed and implemented **C++** algorithms for real-time decision-making, enabling autonomous responses to environmental stimuli and opponent strategies.

Full Stack Developer **June 2024– August 2024**

Signova *Remote*

- Developed and maintained scalable web application, enhancing user experience by implementing responsive design principles using **React.js, Node.js, and Bootstrap**.
- Increased website traffic by **30%** through a user-focused redesign leveraging UX research and data-driven analysis of industry metrics.
- Conducted code reviews and implemented **CI/CD pipelines**, improving deployment efficiency by **35%** using Git.

Lifeguard **April 2023 - September 2023**

Canada's Wonderland *Vaughan, Ontario*

- Conduct regular inspections of the facility to identify hazards or unsafe conditions and take appropriate action to address them.
- Provide excellent customer service by assisting patrons with inquiries, enforcing facility policies, and offering guidance on water safety.
- Respond quickly and effectively to emergencies, including rescuing swimmers in distress and administering first aid or CPR as necessary.

Projects

Snake Game | *C, C++, OOD, GitHub, Visual Studio* **December 2024**

- Designed and implemented a modular snake game in C++ by applying object-oriented design concepts, such as polymorphism, inheritance, and encapsulation, to produce code that is reusable and maintainable.
- Created advanced game play features like collision detection, border wrap-around, and multiple specific food spawning and creation.
- Implemented dynamic memory allocation management and structured programming to provide dependable and efficient functioning free from memory leakage.

SpendFlow | *C, Valgrind, gnuplot* **November 2024**

- Developed a C-based financial management application to track income, expenses, and savings goals, enabling users to make data-driven financial decisions.
- Implemented budgeting and expense tracking features with customizable categories and detailed reports to analyze spending patterns.
- Integrated gnuplot to generate visually compelling graphs and charts, providing users with intuitive representations of their financial data.

Fuel Tripperz | *HTML, CSS, JavaScript, Express, TensorFlow* **April 2024 - May 2024**

- Created an AI-powered system using neural networks to identify cars from images and provide comprehensive vehicle statistics.
- Designed a cost estimation feature that calculates fuel expenses by analyzing driving habits, vehicle efficiency, and current gas prices, with integration of the Google Maps API for accurate trip cost assessments.
- Applied modern frameworks to develop an intuitive and responsive interface, improving user data accessibility.