Shiv Patel

📞 +1 (647) 294-0235 ✉ pates302@mcmaster.ca in shiv-sp � shiv-sp 🌐 www.shivpatel.vercel.app

Education

McMaster University   **Hamilton, Ontario**
Bachelor of Engineering (B.Eng), Computer Engineering (ECE) Co-Op   *Sept. 2023 - Apr. 2028 (Expected)*

- <u>Relevant Courses</u>: Data Structures & Algorithms, Principles of Programming, Microprocessor Systems, Logic Design, Microelectronics I, AI - Innovative Technologies, Probability & Statistics, Design & Projects in Engineering, Engineering Communication
- <u>Clubs & Teams</u>: Residence Life Staff (**LLC Community Advisor**), McMaster Gujarati Students Association (**VP Finance**), MacEng Ambassador Program (**Tour Guide** & **Computer Engineering Ambassador**), DeltaHacks (**Participant**), McMaster Intramural League (**Game Official** & **Participant**)
- <u>Awards</u>: McMaster Engineering Dean of Excellence Award (**$7500**), McMaster University Award of Excellence (**$3000**)

Projects

AC to DC Converter — ⌘   **February 2025**
Analog Discovery 3, Oscilloscope, Agilent Function Generator, Electrical Components, LTSpice   *Academic Project*

- Designed and built a **DC power supply** capable of delivering **10 mA at 3V ± 0.1V** from a **120V (rms) at 1 kHz** AC source.
- Implemented a **rectifier**, **filter**, and **regulator** to ensure stable DC output, considering voltage ripple and component ratings.
- Simulated circuit performance in **LTSpice** and validated results with **Analog Discovery 3**, **oscilloscope**, and **Agilent Function Generator**, ensuring design accuracy and efficiency.

UmpireMate — ⌘   **February 2025**
Swift, SwiftUI, XCode   *Personal Project*

- Developed a **cricket umpire** score tracking app for real-time score updates, including **runs**, **wickets**, and **overs**.
- Implemented interactive **buttons** for scorekeeping, such as **Run**, **Wicket**, **Ball**, and **Extra**, using **SwiftUI** components.
- Used **Xcode** to build a clean, intuitive interface with features like **New Inning** and tracking of multiple innings.
- Designed the app to support **dynamic updates** and **real-time** score adjustments with visual feedback for users.

Finance Trend Plotter — ⌘   **January 2025**
Python, Pandas, yfinance, Matplotlib, Jupyter Notebook, numPy   *Personal Project*

- Developed a tool to fetch and analyze **stock data**, given dates and specific stock names via user inputs
- Using **yfinance** and visualized trends with **50-day and 200-day moving averages**.
- Created a production-quality plot with **Matplotlib**, including a professional title, labeled axes, and clear chart elements.
- Utilized **Jupyter Notebook** for interactive analysis and seamless integration of Python libraries like **pandas** for data manipulation.

Programmable and Sequential Logic Circuits — ⌘   **November 2024**
Quartus Prime Lite, Questa FSE, MAX10 FPGA, Verilog, Oscilloscope, Logic Gates   *Academic Project*

- Implemented **combinational** and **sequential** logic circuits, including **JK flip-flops**, **shift registers**, and **synchronous counters**, using Verilog and schematic capture.
- Designed and simulated a **circular shift register** and **synchronous up-counter**, verifying functionality through **HDL** simulations and hardware testing with FPGAs.
- Configured **EEPROM** for binary-to-BCD conversion and measured **access times**, utilizing oscilloscopes and logic analyzers for precise testing.

Experience

Software Development Officer — 🌐   **September 2024 - Present**
MicroBuild Engineering Society McMaster   *Hybrid*

- Ensure **website maintenance** by performing regular updates, fixing bugs, and optimizing the site for performance using **React**, **Next.js**, and CSS frameworks such as **Bootstrap** and **Tailwind CSS**.
- Collaborate in a **team environment**, working closely with designers, content creators, and other developers to implement features, review code, and maintain **version control** using **Git**.
- Enhance the website's functionality and design by integrating **Figma** designs, implementing responsive layouts with **Bootstrap** and **Tailwind CSS**, and optimizing for user experience.

Skills

Languages: Python, C/C++, Embedded C, Assembly, HTML/CSS, JavaScript, TypeScript, MATLAB, LaTeX, R, UML, Verilog (HDL), Swift
Frameworks/Libraries: Next, React, TailwindCSS, Pandas, Matplotlib, yfinance, numPy, SwiftUI
Hardware: Arduino, Analog Discovery 2/3, Quanser Technologies, Microcontrollers/Microprocessors, FPGA, Oscilloscopes, Digital Multimeter
Tools: GitHub/Git, Figma, Quartus, OrCAD, LTSpice, Keil uVision, VS Code, XCode, Jupyter Notebook, Microsoft Office (Excel, Teams, Outlook, Word, PowerPoint), AnsysGranta, AutoCAD, PrusaSlicer
Certifications/Training: WHMIS 2015, First Aid & CPR/AED (Level C), safeTALK, AODA, Ontario G-Class License