Avi Patel

250-886-9173 | avixpatel@hotmail.com | linkedin.com/in/avi-x-patel/ | github.com/Avipatel1

Education

University of Victoria — Victoria, BC
Bachelor of Science in Physics, Minor in Computer Science — *Sept. 2019 – June 2025*

Stanford University — Coursera
Machine Learning Certificate — *Jan. 2022*

Experience

Delivery Expert & Store Assistant — June 2022 – June 2025
Domino's Pizza — *Victoria, BC*

- Delivered timely, accurate orders while providing courteous customer service in a high-volume, fast-paced environment
- Coordinated with kitchen staff and drivers to streamline operations and minimize delivery times during peak hours
- Managed cash and digital transactions, maintained accurate delivery logs, and resolved customer issues efficiently
- Demonstrated reliability, attention to detail, and teamwork under pressure across over 1000+ delivery shifts

Academic Projects / Work

Van der Graaf Generator | *Electronics, Experimental Design, Prototyping, Electrostatics* — April 2023

- Collaborated in a 4-person team to design and construct a functional Van de Graaff generator for an upper-year physics project
- Interfaced physical components (belt, electrodes, motor) and tuned discharge behavior through iterative testing
- Presented findings to peers and faculty, receiving top marks for experimental setup and technical communication

Scientific Lab Reports | *Data Analysis, Python, Excel, Technical Writing* — 2019 – 2025

- Authored 80+ lab reports across diverse physics domains including optics, thermodynamics, electromagnetism, and astrophysics
- Conducted rigorous experimental data acquisition and applied statistical methods to assess uncertainty, validate hypotheses, and interpret physical systems
- Developed clear, technically sound reports tailored to academic audiences, demonstrating precision in communicating complex methodologies and outcomes

Patient Management System | *Python, MVC Architecture, GUI, Git, Unit Testing* — Sept. – Dec. 2024

- Designed and implemented a modular healthcare application in Python using the Model-View-Controller (MVC) architecture to separate business logic, data management, and user interface
- Developed full CRUD functionality for managing patient records, including validation, persistent storage, and dynamic updates
- Built an interactive graphical user interface (GUI) to simulate real-world clinical workflows and improve user accessibility
- Collaborated in a two-person team across multiple development cycles; applied version control and software engineering best practices throughout

Data Analysis Work | *Physics, Data Collection, Data Analysis, Visualization* — 2019 - 2025

- Collected and analyzed experimental data across optics, thermodynamics, and astrophysics labs; applied regression and curve fitting to determine physical constants
- Applied uncertainty analysis and statistical methods to validate results against theory
- Built numerical simulations in Python to model dynamical systems and visualize outcomes
- Produced 80+ technical reports and presentations communicating data-driven findings to academic audiences

Experimental Physics | *Circuit Design, Signal Processing, Instrumentation* — Jan. 2022

- Designed and assembled small-scale analog circuits including RC filters, audio amplifiers, and a sound-to-light converter using breadboards and discrete components
- Utilized oscilloscopes and multimeters to test signal behavior, measure frequency response, and validate theoretical predictions

- Interpreted schematics, calculated component values, and debugged circuit behavior through iterative testing and analysis
- Reinforced core electronics principles by translating theoretical knowledge into practical prototypes and experimental validation

Ray Tracer | *Python, File Parsing, Image Rendering, Computer Graphics* Jan. 2025 – Apr. 2025

- Implemented a ray tracing algorithm in Python as part of a computer graphics course to render 3D scenes from textual scene descriptions
- Developed a file parser to interpret object positions, materials, light sources, and camera settings from a custom input format
- Calculated light paths, shading, and reflections using vector math and intersection algorithms; generated final scenes as .png images
- Demonstrated proficiency in geometric transformations, recursive algorithms, and pixel-level image synthesis

Physics Seminar Presentations | *Technical Research, Science Communication* Jan. 2023 – Apr. 2023

- Researched advanced physics topics including optical black hole analogues and the physics behind nuclear weapons, synthesizing academic literature and theoretical models
- Created and delivered technical presentations tailored for peer and faculty audiences, translating complex physical principles into accessible formats
- Demonstrated strong scientific communication, slide design, and public speaking skills in a formal academic setting

Technical Skills

Languages: Python, Java, C/C++, SQL, JavaScript, HTML/CSS, R, LaTeX
Developer Tools: Git, VS Code
Libraries: pandas, NumPy, Matplotlib

Soft Skills

Analytical Thinking: Applied to complex physics & mathematics problems
Collaboration: Worked in teams on projects and labs
Scientific Communication: Delivered 80+ technical reports and physics presentations
Time Management: Balanced coursework, projects, and work over 3 years
Adaptability : Self-taught machine learning and statistics, applying it to real data
Customer Service : Maintained professionalism over 1000+ Domino's shifts