Harsh Patel

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Education

Bachelor of Software Engineering **University of Victoria** **Sept 2019 - Aug 2025**

- GPA: 3.27 / 4.00
- Relevant Courses: Data Mining, Data Pattern and Recognition, Artificial Intelligence, and Massive Datasets

Technical Skills

- **Languages**: Python, Java, C, SQL, R, JavaScript, HTML, CSS
- **Frameworks**: Vue.js, Node.js, Express.js, React, Flask, PyQt5, Matplotlib, TensorFlow, Pandas, PySpark, NumPy
- **Tools**: Git, Sisense, Snowflake, Databricks, Microsoft Suite, Terraform, Docker, Apache Airflow, Jira, Selenium
- **Database & Cloud**: SQLite, PostgreSQL, AWS – EC2, ECS, ECR, SNS, S3, Redshift, Lambda, SageMaker

Experience

Python Developer Co-op **Solaires Entreprises Inc.** **Jan 2025 - Aug 2025**

- Designed and implemented a state machine in a standalone PyQt5 application to dynamically render up to 14 boxplots using Matplotlib, based on any combination of 7 interactive checkboxes.
- Updated the local standalone PyQt5 software by adding experiment-specific checkboxes, modifying the database schema, integrating a calendar widget, and enhancing the UI with additional labels, buttons, and functionalities.
- Created Flask middleware with 10+ API routes to facilitate seamless communication between the Vue.js frontend and the Node.js backend.
- Built a secure Vue.js login page using HTTP-only cookies for session validation, added logout and frontend inactivity timeout features, and created a swimlane diagram illustrating the JWT authentication logic.
- Developed a Vue.js page with 2 unique layouts to display database items, featuring responsive resizing, pagination, and adjustable content display that dynamically adapts the layout.

Software Engineer Intern **Clutch Canada** **Jan 2022 - Aug 2022**

- Developed a docker compatible scraper to gather data from Autotrader for business executives to make decisions on pricing and demand of the vehicle, preventing 80% of errors generated from connection issues.
- Executed scraper inside docker container (automated with Airflow DAG) by structuring ECS Fargate cluster and ECR repository, resulting in the reduction of scraper runtime by 30%.
- Initiated and designed software, integrated with Airflow, that converts unstructured PDF files to CSV to analyze vehicle data, decreasing 80% of time spent on the evaluation of each PDF file.
- Enhanced data protection by encrypting 100% of customer private information stored in the database.
- Reconstructed scrapers for Autotrader, Kijiji, and CarGurus and performed automation using Python and Amazon Lambda, improving scraper runtime by 20% compared to previous execution.
- Implemented thorough unit testing, achieving over 60% coverage, leading to a more robust and reliable program.
- Deployed a lambda function that format alerts from SNS and delivers to the specified Slack channel, ensuring alerts miss rate of 0%.

Software Developer Intern **Curbie Cars** **Sept 2021 - Jan 2022**

- Redesigned the data gathering process for CBB API using asynchronous and multi-threading algorithms in Python to develop machine learning models for vehicle price prediction, improving script runtime by 300%.
- Collected visitor's data from Matomo API using Amazon Lambda for the marketing team to understand customer needs, resulting in 20% higher website traffic and improved customer service.
- Presented a comprehensive 50-slide solution to the CTO outlining the process for identifying visitors on the website using Matomo.

Projects

VikesPlace

- Engineered robust backend for a web application that mirrors the functionality of Facebook Marketplace.
- Enhanced backend of microservices with unit testing to ensure robust functionality and performance consistency.
- Constructed a resilient data layer in the backend to ensure 0% data corruption by requiring all API calls to pass through this layer before interacting with the database.