Tirth Patel

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Technical Skills

Languages: Python, C/C++, HTML/CSS, JavaScript, Bash(Linux), SQL
Developer Tools: VS Code, PyCharm, GCP, Git, AWS Redshift, Lambda, EC2, Glue, Sagemaker
Frameworks: PyTorch, SciKit-Learn, Tensorflow, OpenCV, Pandas, Selenium, Flask, React.js

Experience

Software Developer **May 2024 – Current**
Ontario Ministry of Health - Corporate and IT Solutions Division *Toronto, Ontario*

- Incorporated **python to create scripts in AWS glue** that assisted in the **migration of data** to **redshift clusters**.
- Utilized file splitting with multiple Redshift nodes to reduce data load time for numerous pipelines by over **50%**.
- Wrote **unit tests** for **over 10 data pipelines** to ensure all new scripts would transform and load data correctly.

Firmware Engineer **January 2024 – Current**
University of Waterloo Formula Electric *Waterloo, Ontario*

- Created **HIL tests** using Python to validate electric car components and determine expected behavior.
- Conducted in-depth examination of **C firmware code** and schematics to identify source variables and functions.
- Worked collaboratively with peers to program an LED panel using an STM32 microcontroller, utilizing C programming.

Full Time Volunteer **June 2023 – September 2023**
BAPS Akshardham *Robbinsville, New Jersey*

- Joined the volunteer force to help build the largest Hindu temple in the world located in New Jersey, built using over 2 million cubic feet of stone, and 300,000 individual stones.
- Helped create a **MERN stack** inventory web-application that increased efficiency in stone transportation by **40%**.
- Worked seamlessly alongside hundreds of other volunteers of varying ages, skill levels and professions.

Projects

ESPN Fantasy Automation Bot | *Python, Selenium, Google Cloud Console*

- Implemented Selenium to create an instance of Safari in order to interact with the correct elements of the web page.
- Created a **Linux virtual machine** to run on Google Cloud so that the program is able to run everyday from the cloud.
- Used **Cron to schedule the program** to execute automatically at 11 AM every morning to set my lineup daily.

Basketball Form Corrector | *Python, Sci-Kit Learn, Pandas, Numpy, OpenCV*

- **Generated, processed and normalized** data of the different angles when someone shoots a basketball.
- Created a **KNN model** from the ground up to **classify** the most important characteristics of the persons shot.
- Presented an accurate recommendation to the user using **statistical analysis** based on the determined characteristics.

Health Services Website | *Python, Sci-Kit Learn, Pandas, Numpy, Flask, HTML/CSS JavaScript*

- Developed a web-app where the user receives a severity report of what to do based on chosen symptoms that they have.
- Seamlessly implemented Flask for the backend for a max **15 second response time** on all queries.
- Used a **random forest classifier** model trained on a dataset of 5000 symptom classifications to classify the severity.

Chess Game | *Python*

- Implemented a a game of chess using Python, with both a 2 player and **1 player option against an AI.**
- Used OOP principles such as **inheritance, polymorphism and encapsulation** to create and move chess pieces.
- Chess AI achieved a **45% win rate** against intermediate players.

Education

University of Waterloo Waterloo, ON
Candidate for Bachelors in Computer Science, **3.5 GPA** Sept 2023 - May 2027
Relevant Coursework: Data Structures and Algorithms, Object Oriented Programming, Functional Programming, Computer Organization and Programming