ASEEF ALI HASAN

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EDUCATION

University of Toronto ***Toronto, ON***

Bachelor of Science in Computer Science and Statistics

Relevant Coursework: Intro to Statistical Reasoning and Data Science, Object Oriented Programming, Linear Algebra, Calculus I&II

EXPERIENCE

University of Toronto, Department of Physics ***Toronto, ON***

Undergraduate Research Assistant *April 2024 - Present*

- Utilized Python to automate data collection processes and employed Pandas and NumPy for data manipulation and preprocessing tasks, ensuring data quality and consistency in curating physics educational material for large language model training.
- Coded Python scripts to perform statistical analysis and visualization of dataset characteristics and used measures of central tendency, R1 score, Mean Squared Error, and other statistical evaluations to ensure a high degree of accuracy.

CouBon Ltd. ***Toronto, ON***

Full Stack Web Developer *October 2023 - Present*

- Leveraged HTML/CSS to design a user-friendly front-end dashboard and pop-ups for 50+ restaurants to manage their coupons.
- Engineered a responsive AngularJS UI (TypeScript, JavaScript) to store customer data and retrieve it through Firebase (NoSQL) database to handle multiple input and file types enabling registration and edit functionality for the coupon registration dashboard.
- Achieved a significant 30% increase in user engagement and enhanced marketing insights, resulting in a 15% boost in revenue.
- Collaborated with a team of 3 developers to expand different aspects of the web app while utilizing Git version control software amassing 2000+ commits through the design and implementation of several features.
- Led team meetings with the CTO to implement design and coding standards to foster code quality, readability, and scalability.

PROJECTS

UNICEF Conflict Prediction using Machine Learning Models | Python, Pandas, Plotly, NumPy, SciPy, Scikit-Learn / Presentation

- Worked with data from UNICEF and Dr. Schwartz using statistical methods like hypothesis testing, correlation estimation, linear regression, classification to predict conflict worldwide and assess the machine learning models, (xgboost, ffnn, transformer).
- Implemented a forward selection step-wise regression model which we used to determine which UNICEF/FSI-based data subsets negatively affected the accuracy of the models.
- Developed easy-to-understand visualizations for a non-technical audience and tided data set to minimize errors in analysis.
- Created a new model for UNICEF with 88% accuracy that minimizes overfitting, accurately predicting real-world conflict.
- Assessed ethical implications relevant to the current efforts of UNICEF to minimize global conflict and also protect the global security and privacy of people from data collection threats.

Halal Restaurant Finder | Python, Yelp Fusion API, Tkinter / GitHub

- Integrated the Yelp Fusion API to fetch restaurant data based on user-provided location and to retrieve and display real-time data.
- Developed a user-friendly Python application with a GUI (Graphical User Interface) using Tkinter that took user input to help users find halal restaurants nearby.
- Enabled users to enter their location and initiate a search for halal restaurants and visually displayed restaurant information, including name, rating, and address, within the application.

Analysis of 2020 COVID-19 Recession using Normal Distributions | Python, Pandas, Plotly, Excel / Report

- Used Excel to investigate the use of normal distributions in modelling the 2020 COVID-19 recession to see its impacts.
- Dealt with large data sets including S&P 500 closing values from 2013 to 2023, totalling to 2500 data points.
- Modelled normal Distribution using Excel, VBA scripting and pivot tables to found mean and normal distribution values.
- Used the z-score to find the probability of specific percentage increases/decreases during the pandemic and during a period of economic growth and compared how it impacted our economy. Aiming to expand analysis via Pandas and Plotly visualizations.

University Application Helper | Java, JOptionPane / GitHub

- Utilizing Java to create a program that helps users apply for top University programs in Canada.
- Collected user input of their coursework and grades through JOptionPane GUI (Graphical User Interface).

SKILLS

- **Languages:** Python, Java, SQL, HTML, CSS, JavaScript, TypeScript, JSON
- **Frameworks:** Node.js, Express.js, AngularJS, Pandas, Plotly, NumPy, SciPy, Scikit-Learn, Tkinter, JOptionPane, Django
- **Tools:** Firebase, Git, GitHub, VS Code, Jupyter, Linux, Windows, Mac OS, MS Office, Excel (VBA, Pivot Tables), Power BI