SAHIB BIR SINGH BHATIA

MSc Computer Science

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PROFESSIONAL EXPERIENCE

Credera UK Ltd, United Kingdom **Period:** Mar 2022-Present

Software Engineer

- Designed and implemented a **cutting-edge web-based application** and data visualization platform to empower traders with the ability to make informed decisions in the regulated carbon credits market. Utilized **TypeScript** to craft intuitive and interactive visualizations including **graphs, tables, and charts to showcase trends** in ETS emissions, price estimates, and time spreads.
- Streamlined data retrieval and updating processes for traders by automating crucial tasks using **Python scripts**. This reduced manual effort and ensured the database was consistently updated with the most relevant and accurate trading data.
- Developed a robust **REST API utilizing C#** to provide seamless connectivity between the database and front-end dashboard. This ensured real-time access to updated data and enhanced the overall user experience.
- Constructed **scalable data pipelines in Azure** to gather data from various third-party APIs and store it in the centralized data warehouse. This enabled the team to gather data from multiple sources, ensuring data accuracy and reliability.
- Designed and maintained database tables and views using **SQL** to make data easily accessible for the front-end dashboard. The REST API was engineered to retrieve data from the database views, providing the front-end dashboard with the necessary information for accurate data visualization and analysis.

TECHNICAL SKILLS

- **Proficient in**: HTML, CSS, JavaScript, TypeScript, ReactJS, Python,SQL
- **Experienced with**: Git, Testing libraries (Jest), Figma, Firebase, Heroku, C#, .NET, GraphQL, Swagger, Sanity IO
- Strong understanding of user experience **(UX) design principles** and practices.
- Ability to translate wireframes and designs into responsive and visually appealing web pages.
- Knowledge of browser compatibility issues and cross-browser testing.
- Skilled in debugging and troubleshooting front-end code.
- Proficient in creating and maintaining **technical documentation**, such as user manuals and code comments.
- Adept in using **Agile methodologies** and **Test-Driven Development (TDD).**
- Experience with data engineering and analytics using Python, including data manipulation and analysis, data visualization, and creating data pipelines in **Azure**.
- Experience with building **REST APIs** and connecting front-end dashboards to databases using C#.

EDUCATION

- **Master of Science in Computer Science, University of Liverpool, United Kingdom** **Period:** Jan 2021-Jan 2022

  Core Modules: *Machine and Bio inspired Learning, Neural Networks and Evolutionary Optimization, Applied Algorithms, Data Mining and Visualization, Data Base Management Systems, Web Programming, Python Programming*

  Grade: First Class with Distinction (87%)

PROJECTS

Decentralised NFT (Non-Fungible Token) minting web platform

- Designed and developed the NFT minting platform with a focus on user experience, incorporating a responsive design using **TypeScript**.
- Implemented **GraphQL** for optimized data retrieval and efficient queries for better performance and scalability.
- Incorporated **MetaMask authentication** to secure transactions and provide a secure environment for NFT owners and buyers.
- Utilized **Sanity** as the headless CMS to manage the platform's content and made it easier to retrieve and manage NFT metadata, including description, image, and other relevant data.
- Integrated **Open Sea** to enable users to buy and sell NFTs through the platform, increasing exposure and accessibility.
- Leveraged WEB3 technologies such as **Ethereum blockchain** and smart contracts to ensure secure and transparent transactions for NFTs, reducing intermediaries and increasing efficiency.

- Deployed the platform on a cloud-based infrastructure using **Netlify**, ensuring seamless integration with the various technologies used for optimal performance.

Topic Modelling Web Application [Dissertation], University of Liverpool

- Implemented **Latent Dirichlet Allocation (LDA)** algorithm to process large amounts of product review data.
- Designed and built a user-friendly front-end interface using **HTML, CSS, and ReactJS** for non-technical users to interact with and understand product reviews.
- Created interactive visualizations to enhance decision-making capabilities for manufacturers, consumers, and product owners.
- Utilized Python for the back-end machine learning model to provide efficient processing of data.

Movie and Web Series Viewing Platform

- Built a platform that allows users to view Netflix movies and web series by genre, utilizing the **React JS** framework for the front-end design.
- Utilized an **open-source movie API** to fetch movie details and display them on the website based on the selected genre.
- Enhanced the visual appeal of the website through **CSS styling**, capturing the essence of the Netflix colour scheme.
- Deployed the platform on **Firebase** and designed a user-friendly interface that enables users to view movies and play trailers directly on the website.

Data Science Projects, University of Liverpool

- **Development of Optimized Artificial Neural Network Models using Genetic Algorithm and Swarm Intelligence Techniques:**
    - Utilized Genetic Algorithm and Swarm Intelligence techniques to optimize the training of an Artificial Neural Network (ANN) model on the iris dataset.
    - Achieved a high level of accuracy with the optimized model, reaching 95%.
- **Designed and implemented both single and multi-layer Perceptron models using Python:**
    - Trained the models on the iris dataset and achieved accuracy scores of 95% and 98% respectively.
- **Construction of a Deep Q Learning Model for Atari Games in Open AI Gym Environment:**
    - Designed and built a machine learning model based on the Deep Q learning algorithm.
    - Utilized the Open AI Gym environment to train the model on the Lunar Lander Atari game, demonstrating its ability to learn and play the game.

Lab Booking Website, University of Liverpool

- Designed and developed a web-based application for booking lab sessions at a university. Utilized **HTML and CSS** for the front-end design, capturing the essence of the university's colour scheme.
- Implemented a back-end solution using **PHP script** to process user requests and interact with a user-created database based on **MySQL**. The database stores all the information of available lab sessions and the details of bookings made by students.
- Created a user-friendly interface that allows students to easily book lab sessions in a few simple steps. Improved the overall efficiency of the lab booking process by automating it.

Dice Game, University of Liverpool

- Designed and implemented a user-friendly interface to allow users to input the number of dice they want to roll, which can range from 3 to 6.
- Leveraged **JavaScript** to provide a backend solution, which includes randomly generating the result of dice rolls and calculating points based on the outcome.
- Successfully integrated the back-end JavaScript with the front-end interface, enabling real-time display of results to the user.

Data Science in Cricket: [Literature Review], University of Liverpool

- Conducted a comprehensive literature review as a member of a 5-person team on the application of machine learning models in the field of cricket.
- Analysed various studies and papers to understand the use of Python for implementing machine learning algorithms for various cricket data analysis tasks.
- Presented a PowerPoint presentation to the class, summarizing the key findings and insights gained through the literature review.
- Contributed to the team's efforts to effectively communicate the results and the significance of data science in the sport of cricket to the audience.