

SANAT BHALLA

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EXPERIENCE

Embedded Software Developer Ford Motor Company

Waterloo, ON (Remote)
Jan 2021 - Present

- Worked as a SYNC HMI developer to develop the UI framework for the 10", 12" and 15" infotainment systems of Ford Mustang Mach E and F150 using React.js, JavaScript and TypeScript
- Collaborated with the team in an agile environment and participated in high quality code reviews that focused on weekly deliverables
- Implemented the Observable pattern to improve the code scalability of Towing and Trailer Blind Spot feature on the latest launch of Ford F150
- Used MQTT broker to send signals to the infotainment screen to publish the React.js components
- Used DET (Diagnostic Engineering Tool) and VnMod Simulator to configure the infotainment system from the linux host
- Developed C/C++ modules to render React Native components on the Unreal Engine using the TCP client broker

Data Engineer InnovaPost

Ottawa, ON (Remote)
May - Aug 2021

- Worked on a continuous ongoing project to shift all the Canada Post data from Legacy Oracle Servers to the Cloud Databases in an Agile and Scrum format
- Developed Initial and Delta Load ELT Pipelines using Python that performed various transformations to move data from Oracle to Azure SQL Server
- Used Azure Data Factory as an Orchestrator to accommodate the pipeline and made Spark API calls to trigger Databrick notebooks
- Developed and Documented unit tests to check the working of different parts of the Data Pipeline at the functional level

Coding Instructor CoderCookies

Waterloo, ON (Remote)
Oct - Jan 2022

- Introduced basic to advanced level concepts (including OOP, Data Structures and memory management) of programming in C/C++, Python, JavaScript to intermediate students

PROJECTS

Sentiment Analysis on Crypto | Python

Dec 2021

- Developing an automated trading software for Crypto currencies based on sentiment analysis of the market trends
- Designing a Neural Network using NLP and Image Recognition in a Semi-Supervised form to train the model with past data accessed from various sources such as Twitter, Yahoo News etc
- Designing a decision tree for the model to calculate the expected impact of each data centric and sentiment based decision to improve the accuracy of the model

Hydra Card Game | C/C++

Aug 2021

(Private Repository, message to see)

- Developed the backend of a computerized card game using Object-Oriented Programming and advanced C/C++ concepts such as smart pointers, inheritance, polymorphism
- Managed memory on the heap using smart pointers thus making the program more efficient
- Implemented a user friendly MVC (Model View Controller) design pattern that promoted high cohesion, low coupling and the concept of encapsulation and information hiding

Movie Recommender | Python

Feb 2021

- Developed a Machine Learning Movie Recommendation System using Python based on the concept of User-User Collaborative Filtering

EDUCATION

University of Waterloo

Waterloo, Canada

2020 - 25 (expected)

Candidate for Bachelor of Computer Science

Member of UW Data Science Club

DPS Kalinga

Cuttack, India

2006 - 20

AISSE (class 10) - 92.4%

AISSCE (class 12) - 96.6%

SKILLS

Languages

Python, C/C++, JavaScript, SQL, R, HTML/CSS, DrRacket

Data Science / Engineering

Scikit-learn, MySQL, Apache Spark, Databricks, MongoDB

Software/Web Development

React.js, TypeScript, Angular, Bootstrap, NodeJs/Nodemon,

Others

Git, GitHub, Cloud Services (Azure, AWS, GCP)

ACTIVITIES

Data Science Club (2020 - 21)

- Developed a Data Visualization Project on NBA Statistics using Jupyter Notebooks for the UW Data Science club that helped me understand the basics of Machine Learning models

- Used Python Libraries such as Numpy and Pandas to explore and clean the data

- Used Plotly to visualize and present the data to draw conclusions

School Head Boy (2018 - 20)

- Headed the students' council (2018-20) and organized various activities as well as planned large events for the school

- Nominated by the school for Indo-Russian meet held at New Delhi, India

- Used Python Libraries such as Numpy and Pandas to work with DataFrames, arrays and wrote various algorithms to clean, standardize and structure the final solution

Stock Movement Visualizer | JavaScript

Dec 2020

- Developed an app to visualize changes in stock prices
- Designed front-end of the web app using HTML-CSS, added functionality with JavaScript and hosted using Heroku
- Monitored the backend and called APIs using NodeJs/Nodemon