Brij Sharma (Immediately Available)

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Career Objective

I am immediately available and looking for entry level opportunity in the field of data engineering and data science domain. I have good exposure of working on python scripting, databases and cloud-based application development. I am currently undergoing internship at IISC Bangalore DREAMLAB and working under guidance of research professionals.

Education and Experience

Internship IISC Bangalore Dreamlab   May 2024- Ongoing

MTech(Data Science Engineering), Manipal University Jaipur, Rajasthan   May 2023– July 2025

B.E. (Bachelors in Electronics and Communication Engineering), SKIT Jaipur, Rajasthan   Aug 2018 – July 2022

Projects

Automated SUMO Simulator / *Python,Traci*   May 2024 – January 2025
- Developed automation pipeline to streamline the traffic simulation process in SUMO
- Automated key processes of simulation creation -
  - Network Extraction
  - Demand data conversion from CSV to XML format that needs to be passed in Route Sampler for routes creation
  - Optimized Simulation data extraction and csv creation for passing in GNN models
- Developed a memory managed solution for handling large scale simulation data by saving and processing FCD output in chunks, reducing storage overhead.

Scenario-Based Traffic Simulations & Data Extraction / SUMO,*Python*   May 2024- August 2024
- Created multiple traffic simulations incorporating various "what-if" scenarios, including road closures, lane reductions, and increased traffic congestion in specific city areas.
- Extracted vehicle movement data from these simulations and converted it into structured CSV format for further analysis.
- Optimized the data extraction process using FCDoutput (Floating Car Data) files instead of TRACI, improving performance and reducing memory usage.
- Implemented automated scripts to generate, run, and analyse different traffic scenarios efficiently.

Federated Learning Inference Dashboard / Flask,*Python*   October 2024
- Developed a real time inference dashboard for visualizing federated learning metrics.
- The dashboard is automatically launched when the federated learning code runs.
- Live plots of loss and accuracy are displayed on the website as training progresses.

Vehicle detection Web Application | Flask**,***Python*   October 2024
- Built a web application where users can upload a video for vehicle detection.
- The uploaded video is processed using YOLO models to detect vehicles.
- The detected vehicles are displayed on a results page with their corresponding labels.
- Implemented a smooth workflow from video upload to inference and result visualization.

AI-Powered duet choreography / *Python, Pytorch, LSTM*   June 2024
  - This project merges AI and dance, focusing on duet choreography.
  - It involves extracting pose data from duet videos and training AI models.
  - The AI predicts Dancer #2's movements or creates new, physically feasible duet phrases based on Dancer #1's inputs.
  - The model's outputs will be used in collaboration with the original dancers to inspire new performances.

E-commerce Dashboard visualization / *Power BI*   October 2023

  - Designed this project to create a comprehensive and interactive dashboard using Power BI to analyse and visualize key metrics and trends in an e-commerce business. This dashboard will provide valuable insights into sales performance, customer behaviour, and inventory management.

Chatbot / *Python, Dialogflow, MYSQL, Fast API*   September 2023
  - Developed a sophisticated chatbot for the food business.
  - These key features were integrated in this chatbot –
    a. Order placement, **b.** Payment support, **c.** Order tracking, **d.** Offer management, **e.** Store information
  - Leveraged Dialogflow to configure and customize the chatbot's conversational flow.
  - Utilized Python for backend development, ensuring the robustness the scalability of server-side logic.
  - Implemented the Fast API framework to build the backend server.
  - Designed and maintained the database using MySQL, ensuring data integrity and seamless retrieval of customer information and order details.

Achievements-

- Winner in a poster presentation on the topic – "An approach for forecasting Neurodegeneration diseases using deep learning" in InnovateX under SSIC (International Conference on Smart System Innovations in computing)2023
- Best paper selection in the International Symposium on Data Science on the topic – "Deep Learning Approach for Parkinson's Disease Detection: Review, Challenges and Recommendations" organized by ACM student chapter
- Patent published with Application No. 202311073993 A, Title- Indian Classical Music Classification Model
- Attended *HIPC (High Performance Computing) Conference* in December 2024.
- Participated in Hackathon (Elicit'23: Hackx 8.0) and made a website based on NLP organized by ACM student chapter
- Paper accepted in a conference on Intelligent Systems and Embedded Design (ISED 2023)- "A Robust Efficient Architecture for Brain Tumour Classification and Identification using MRI Image" (Under publication)
- Internship completed at Nectar Infotel on Data automation[Link].
- Selected for a summer internship at IIT Kharagpur.
- Currently pursuing an internship from IISC Bangalore at DREAM Lab, where I am working on some innovative projects under the supervision of research professionals[Link].

Certificates

- "Computer communications and networks" from Saylor Academy.
- "Web scraping in Python" from Great Learning.
- "AWS for Beginners" from Great Learning.
- "Programming in Python " from Internshala training.

TECHNICAL SKILLS –

Languages: Java, Python, SQL

Libraries: Pandas, Matplotlib, OpenCV

Development platform: Dialogflow

Tools: SUMO (Simulation of Urban Mobility)

Frameworks: Fast API, Flask

Developer Tools: PyCharm

Scripting Language: UNIX shell scripting, PL/SQL

Cloud Platform: AWS, GCP