GAJENDRA SINGH (Data Scientist)

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EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2024	M.TECH	IIT Kharagpur	8.93/10
2021	B. TECH	Rajasthan Technical University	74.33%

EXPERIENCE

Associate Business Analyst | Affine **[May 2024 - Ongoing]**

➢ **Marketplace Ads Performance in Search Engines**
- Conducted **in-depth analysis** and provided actionable insights to **optimize performance** of KPI and metrics for **Ads campaigns**.
- Designed and developed an **interactive Power BI dashboard** to deliver daily insights, enhancing data-driven **decision-making** for ad campaigns.
- Automated **ETL processes** for campaign analysis using **Azure Data Factory (ADF)**, improving efficiency and reducing manual effort.
- Utilized **Python** and **DAX** to create advanced and visually compelling Power BI visuals, enabling detailed and dynamic data exploration.

➢ **Player Segmentation and Behavioral Insights for Targeted Marketing on PlayStation**
- Conducted player **segmentation** using 27 KPIs (1yr and 3yr) with **bias correction**, **outlier handling**, and **data standardization**.
- Determined optimal clusters using **Elbow**, **Silhouette**, **and DB Index methods**; grouped players into six clusters via **K-Means**.
- Analyzed clusters to derive insights and **labeled segments** as Performers, Exploratory, Frugal, Competitive, Social, and Dormant.

➢ **First Time User Experience (FTUE) Analysis for Call of Duty: Warzone Mobile**
- Created KPIs using SQL and performed **data preprocessing**, **EDA**, and **feature engineering** with Python libraries like **Pandas**.
- Built **Tableau** dashboards to analyze Install Funnel, FTUE Funnel, and daily summaries for user engagement and performance insights.
- Provided actionable insights on user behavior and product performance in Call of Duty: Warzone Mobile.

Data Scientist | MFSDSAI, IIT Roorkee **[May 2023 - July 2023]**

- Built a **Spatiotemporal Model** to predict air pollution levels across road segments in Delhi, accounting for **variations in both location and time**.
- Performed data preprocessing, feature engineering, EDA, and data visualization. Utilized **QGIS** for spatial analysis, enhancing data insights.
- Created **Time Series Models** (**ARIMA, VAR, VARMAX**) for temporal analysis and PM2.5 predictions. VARMAX outperforms others with an RMSE of 29.033.
- Designed **STGNN** and **STGCNN Graph Deep Learning models** for precise next-hour PM2.5 level prediction, **integrating spatial and temporal aspects**.
- Demonstrated outstanding model performance with an average MSE of 19.0432 for STGNN and 12.3012 for STGCNN, validated on the test dataset.

Machine Learning Engineer | COE-SEA, IIT Kharagpur **[Dec 2022 - Jan 2023]**

- Built a model for predicting fire extinguishment from an **Acoustic-Driven Airflow Flame Extinguishing System** comprising **ANN (95%)** and **CNN (97%)**.
- Used **SHAP** and **LIME** with **Explainable AI (XAI)** techniques to identify **impactful features** through **summary, dependence,** and **local explanation plots**.

PROJECTS

➢ **Bus Arrival Time Prediction Model for Urban Heterogeneous Traffic Using Spatio-Temporal Patterns** | M-Tech Thesis **[Aug 2023 – May 2024]**
- Developed temporal models with **Random Forest Regressor**, achieving 22.83% MAPE by capturing temporal dependencies in bus travel times.
- Analyzed peak/off-peak and weekday/weekend travel times, revealing significant **spatio-temporal correlations** within urban corridors.
- Designed a **Multi-Input Multi-Output LSTM model** with shared layers, achieving 18.68% MAPE by capturing spatial and temporal dependencies.

➢ **CardioKernal: Advanced Heart Disease Prediction using Kernel Methods** | Course Project **[Jun 2023 - Aug 2023]**
- Created a **Model from scratch** that predicts whether person is suffering from heart disease using a **Support Vector Machine**.
- Trained dual optimization problem with hyper-parameter tuning (using k-fold cross-validation) [C= 100, p =2, sigma = 2.5].
- Accuracy obtained from **Linear, Polynomial,** and **rbf kernels** is 80%, 83% and 91% respectively.

➢ **StreamForecaster: Real-time Stock Trend Analysis and Prediction** | Course Project **[Mar 2023 - April 2023]**
- Developed an **LSTM model** for accurate stock trend predictions based on tickers with RSME value = 2.23 (14.19%).
- Created an interactive **Web App** using **Streamlit** to provide data-driven insights into stock behavior via machine learning techniques.

PUBLICATIONS

- Selected to present Master's Thesis at the **INTERNATIONAL CONFERENCE ON URBAN AFFAIRS** in **New York City, USA**.
- Selected Presenter at the **International Conference on Data Analytics for Business and Industry** (ICDABI) **(DATA'23)**.
- Published a paper, **Explainable AI-Driven Machine Learning Approach for Prediction of Acoustic-Based Fire Extinction (2023)** on **IEEE Xplore.**

SKILLS AND EXPERTISE

- **Data Science & Programming**: Python, SQL, PySpark, Pandas, Numpy, Matplotlib, Pytorch, Streamlit, TensorFlow, Scikit-Learn, NLTK
- **Cloud and MLOPs Tools**: AWS, ML Flow, Docker, Git, DVC, CI/CD, Databricks, FastAPI
- **Data Analysis and Engineering Tools**: - PowerBI, Tableau, Excel, Azure Data Factory (ADF), QGIS
- **Expertise**:- Statistics, Machine Learning, Deep Learning, LLM, GenAI, LangChain, NLP, DSA, OOPS, EDA, ETL.

CERTIFICATIONS

- **Machine Learning Specialization** course on Coursera (DeepLearning.AI)
- **Google Project Management: Professional Certificate** course on Coursera (Google)
- **Think SQL: Go from Zero to Hero** course on Namaste SQL.
- **Programming with Python** course on Internshala.

AWARDS AND ACHIEVEMENTS

- Secured **All India Rank 135** in Graduate Aptitude test in Engineering (GATE) [ES] with **Top 2 Percentile**. [GATE 2022]
- Awarded a **Scholarship (TFWS seat)** for being an excellent academic student during my bachelor's degree.

EXTRA CURRICULAR ACTIVITIES

- **Project Lead** at **SPARK4AI** (AI Community, IITKGP)**:** Leading 2 teams of 9 members each in AI project execution. **[Oct 2023 - Nov 2024]**
- **Teaching Assistance** for **97 UG** students in the ED and Computer Graphics course (CE13003) at IIT Kharagpur. **[Aug 2023 - Apr 2024]**
- **Core Committee Member** of the **Annual IBSR Conference** of RCGSIDM department, IIT Kharagpur.