



## EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2024	M.TECH	IIT Kharagpur	8.90 / 10
2021	B. TECH	Rajasthan Technical University	74.33%

## EXPERIENCE

## Associate Business Analyst | Affine

[May 2024 - Ongoing]

- **Marketplace Ads Performance in Search Engines**
  - Conducted experiments for treatments and controls using **Agora** and **FSC** to evaluate ad performance.
  - Optimized **SQL** and **Cosmos** scripts, automating deployments via **Azure DevOps**.
  - Built and managed ETL pipelines in **Azure Data Factory** using **Microsoft Fabric**.
  - Developed **Power BI** dashboards to track KPIs, analyze experiments, and monitor forecasting models.
- **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.
- **CardioKernel: 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.
- **ChurnSense: Smart Telecom Churn Prediction System** [Oct 2022 - Dec 2022]
  - Created a **PowerBI dashboard** for telecom churn analysis, enabling easy visualization of key patterns and trends.
  - Addressed imbalanced data using **SMOTEENN**, then built accurate **Decision Tree (93%)** and **Random Forest (80%)** models for churn prediction.
  - Deployed** the models using **Flask**, making them accessible for real-time customer churn classification.

## 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

- **Programming Language/ Tools**: - Python, SQL. • **Others**: - PowerBI, Tableau, QGIS, MS Office, Flask, API, Azure Data Factory, Azure ML, Cosmos.
- **Python Libraries**: - Pandas, Matplotlib, NumPy, TensorFlow, Pytorch, Seaborn, Streamlit, Scikit-Learn, NLTK.
- **Expertise**:- Statistics, Machine Learning, Deep Learning, NLP, Database Management, Project Management, DSA, EDA, Optimizations, OOPS.

## 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.
- Selected as one of the **top 5 students** in the "Tall Building Design" workshop conducted by IIT Roorkee.

## EXTRA CURRICULAR ACTIVITIES

- **Project Lead** at **SPARK4AI** (AI Community, IITKGP): Leading 2 teams of 9 members each in AI project execution. [Oct 2023 - Ongoing]
- **Sub-Committee Facilitator** of **RCGSIDM [IIT Kharagpur]**:- **Coordinator** | Managing all needs in the RCGSIDM department. [Aug 2022 - Ongoing]
- **Teaching Assistance** for **97 UG** students in the ED and Computer Graphics course (CE13003) at IIT Kharagpur. [Aug 2023 - Ongoing]
- **Core Committee Member** of the **Annual IBSR Conference** of RCGSIDM department, IIT Kharagpur.