DHANANJAY KUMAR

ACADEMIC QUALIFICATIONS

Year	Degree /Board	University /Institution	%/CGPA
2025*	Post Graduate Diploma in Business Analytics	IIM Calcutta, IIT Kharagpur, ISI Kolkata	-
2021	B.Tech Metallurgical Engineering	Indian Institute of Technology Varanasi (BHU)	76.2 %
2017	CLASS XII	Army Public School Chandimandir	76.4 %
2015	CLASS X	Army Public School Chandimandir	8.2/10

KEY SKILLS/TOOLS Machine Learning, Data Visualization, Python, SQL, Power BI, Excel, Communication Skills

AWARDS AND ACHIEVEMENTS

Academic Achievement	■ **National** Level **Merit Scholarship** for academic excellence by the Indian Army during B. Tech 2nd Year 2018 ■ **5th Rank** - **TriCity** in ANITSE organized by ace tutorial| Ranked in the **Top 1%ile** in **CAT22** quant section
Certification	■ Certified **Lean Six Sigma Green** Belt from **KPMG** | Completed **BCG X Data Science** simulation on Forage plt
Data Science Case	■ **1st Rank** in **Customer Segmentation** case & won worth **₹75000** in **TransOrg Analytics** organized by IMT-G ■ **2nd Rank** in **Supply Chain Analytics** case and won cash prize of **₹10000** organized by DOMS - IIT Madras ■ **2nd Rank** in **Employee Churn Prediction** case and won cash prize of **₹7500** organized by Masters' Union ■ **3rd Rank** in **Data Visualization and Analytics** case and won cash prize of **₹5000** organized by IIM Ranchi
Business Case	■ **2nd Rank** in **Intra-Hospital Patient Transfer** case, IMT- H| **2nd Rank** in **Profitability** of Hotel case, NIT DGP

INTERNSHIPS (2 Months)

T.I.M.E Pune Centre — **Business Analyst Intern** — **Pune (May '23 - Jun '23)**

Roles & Responsibilities	■ Built **Power BI Dashboard** and conducted **data analysis** on **TIME's** courses for strategic decision-making ■ Evaluated **discount** and **revenue** performance across multiple centers to **allocate incentives** for managers ■ Designed an **inventory management system** using **Excel macros** to automate stock tracking & distribution

ACADEMIC PROJECTS

Loan Amount Prediction (Regression)	■ **Predicted loan amount** to be disbursed to customers by training the model with **30k** records & **23** features ■ Handled **multicollinearity** - **VIF**, detected **heteroscedasticity** - residual plot, and **outliers** - **Cook's** distance ■ Evaluated **Lasso** & **Ridge, XG-Boost** and **RF** models| Achieved **20%↑** in adj. R^2 with **XGB** Regressor w.r.t MLR
Customer Segmentation (Clustering)	■ Executed **customer segmentation** analysis on **5L+** records & **8** features for **targeted marketing** strategy ■ Applied **RFM** feature engineering, then **PCA |** Performed **K-Means** and **Agglomerative** clustering methods ■ Identified **3 clusters** using **Elbow plot** method; **K-Means** has best Silhouette score of **0.23** & DB-Score of **1.3**
Bank Customer Complaints Classification (NLP)	■ Constructed a classification model using **GRU, Bi-LSTM & BERT** on **1.8L+** complaints, categorized into **5** cat ■ Addressed **class imbalance**, Preprocessed text by **lemmatization** & employed **GloVe embedding** with **50D** ■ Achieved an accuracy of **0.84**(GRU), **0.85**(Bi-LSTM) and **0.88**(BERT) over base model: Logistic Regression
Brain Tumor Detection (CNN)	■ Architected **CNN models** to detect brain tumour with **5k+ MRI** scan images; Performed **data augmentation** ■ Leveraged transfer learning(**RESNET50** & **VGG16**). Achieved F1score **0.98**(3%↑) by VGG16 w.r.t custom CNN ■ Implemented **U-net** model for **image segmentation** of tumour| Fitted with dice loss & achieve **0.4** mean-IoU
Bike Rides Forecast (Time Series)	■ **Forecasted** hourly demands of bike rides for a US cab service | Executed the **ADF test** to confirm stationarity ■ Perform **STL** decomposition| Analyzed **ACF** & **PACF** plots for ARIMA **order** & residuals with **Ljung-Box** Stats ■ Implemented **SARIMA** models | Supervised **AIC, BIC** for model selection and achieved best **MAPE** of **12.9%**

ADDITIONAL PROJECTS

Live Project TransOrg Analytics (Classification)	■ Developed an online payment **fraud detection** model with **100K+** records and **9** features | Performed **EDA** ■ Applied **feature engineering**, managed class imbalance using **SMOTE** & **under sampling** the majority class ■ Performed **hyperparameter** tuning in **Logistic Regression** and **Decision Tree**| Achieved best ROC **0.997**
Questions & Answers System (Gen AI)	■ Designed **Q&A** system based on **RAG** by using **GPT-3.5** & **Langchain |** Created an **interface** using **streamlit** ■ Created **chunks** and produced **embeddings** using **OpenAIEmbeddings** & used **Pinecone** for vector storage
Fashion Recommendation	■ Produced **top 20** content-based **recommendation** for **28k+** apparel | Vectorized images using **RESNET-50** ■ Generated **BoW**, **TF-IDF**, weighted **Word2Vec**& **SBERT** title vectors | Stacked title(SBERT) & image vectors ■ Weighted sum of image, title, brand & colour vectors gave best results with **98%** avg Symmetric similarity
Workforce Mgmt. (Operations)	■ Planned the healthcare providers' allocation in 24 districts | Built **Dashboard** on **Power BI** to draw insights ■ Forecasted patient volume by Holts-Winter ES | Used LPP to minimize cost of salary and penalty for surplus

POSITIONS OF RESPONSIBILITY & EXTRA CURRICULARS

Sport Captain(POR)	■ Achieved **1st place** in Handball at **District Level U-17**| Achieved **1st place** in basketball (Section War-IIM C)
Youtube, Volunteered	■ **Content creator** on current affairs & PGDBA prep | Volunteered for **Event Management** at Trilytics (IIM C)

ELECTIVES : FRM, Healthcare Analytics, Econometrics , LPT, IBC | **INTERESTS : Basketball**