



DEEPAYAN BASU

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EDUCATION

IIT JODHPUR (JEE Advanced Qualified under **top 0.9%**)
BTech in Materials Science and Metallurgical Engineering || CGPA: **7.46**

Jodhpur, Rajasthan
December 2021-May 2025

SOUTH POINT HIGH SCHOOL
Class 10 (2019) - **95.8%** || Class 12 (2021) - **94%**

Kolkata, West Bengal

WORK EXPERIENCE

DRDO, DEFENCE LABORATORY, MINISTRY OF DEFENCE, GOVERNMENT OF INDIA
Research and Development Intern

Jodhpur, Rajasthan
May 2024 – July 2024

- **Spearheaded** the development of Radar Absorbing Materials (RAM) in the Camouflage Division, achieving a **30%** reduction in radar cross-section (RCS) to enhance stealth capabilities for defense applications in fighter jets..
- **Extended Research:** Engineered a **CNN model** for **SAR Target Classification** using the MSTAR dataset, achieving over **94%** accuracy in classifying SAR images of ground vehicles.

FINANCIAL ANALYTICS CHATBOT ASSISTANT ([Workflow](#))

November 2024-Ongoing

LLM Intern Under Saurabh Kumar (Assistant Faculty @IITJ) || Scientific Investing

- **Automated Entity Extraction:** Developed an NLP model to extract key entities (companies, participants, business quarters) from **15+** quarterly conference call transcripts in **2021**.
- **Chatbot for Document Insights:** Built a **Q&A chatbot** leveraging LLM to retrieve and summarize key information across **100+** PDFs, enhancing financial decision-making. Enhanced search functionality in financial transcripts using **Ollama 3.2:1b**.
- **Advanced Search Optimization:** Using **LangChain**, **ChromaDB**, and embeddings for precise query handling.

PROJECTS

CON-CALL SENTIMENT ANALYSIS PROJECT ([Project link](#)) ([Dashboard](#))

October 2024-November 2024

AI for Fintech Course Project | Under Saurabh Kumar (Assistant Faculty @IITJ)

- Leveraged advanced tools like **VADER** and **AFINN** to extract actionable insights after data cleaning, tokenization, and stopword removal, ensuring seamless analysis of text data.
- Made a **Power-Bi Dashboard** to look at the impact of positive sentiment scores on market trends.

CAUSAL MACHINE LEARNING ANALYSIS TO BOOST USER ENGAGEMENT IN APP PARTICIPATION

Under Dr.Dweepobotee Brahma(Assistant Professor @IITJ) || Applied Economics

September 2024-December 2024

- **Applied Causal Random Forests and Causal Tree models** on survey data (**604 participants**) to analyze Conditional Average Treatment Effect (**CATE**) by age, revealing key drivers of app engagement across demographics.
- **Recommended age-specific strategies:** Reward-based incentives for younger segments(14-20) and trust-building for older(40-60)groups, improving targeted engagement approaches. ([Project Report](#))

ADIDAS SALES DASHBOARD (STREAMLIT APPLICATION) ([App](#), [Project link](#))

August 2024 - September 2024

- Built an interactive dashboard analyzing **100,000+** rows of sales data across **50+** regions and **200+** cities.
- Created advanced visualizations for **sales trends**, **operating profit**, and **top-selling products** and deployed the application for **24/7 accessibility**, enabling cross-functional teams to make data-driven decisions faster.

LANKFORD COEFFICIENT PREDICTION ([Project link](#)):

January 2024 - March 2024

- Designed and implemented a **CNN-based model** achieving **95%+ correlation** between predicted and actual **Lankford coefficients (r-values)** by processing **10000+ ODF images** of crystallographic texture features .

RELEVANT COURSEWORK:

Stanford CS229: Machine Learning by Andrew Ng || AI for Fintech || ML for Economics || Financial Analytics

ACTIVITIES

MENTOR AND CORE TEAM MEMBER OF SANGAM MUSIC SOCIETY, IITJ

IIT JODHPUR

Head of Events

July 2022 – Present

- **Coordinated logistics** for musical events, managing **30+** performers and sound engineers, ensuring flawless performances.
- **Played** as an electric guitarist for **2** music videos and in **3 Inter IIT Cultural Competitions** for **Band battles** and **Pair on Stage**.

ASSISTANT HEAD AND COORDINATOR (UDBHAAS-2022 EXHIBITION IITJ)

IIT JODHPUR

JCKIF (Jodhpur City Knowledge and Innovation Foundation)

November 2022

- Managed **logistics and setup** for Udbhas 2022, showcasing over **200** local artists; the event's success earned recognition from Hon'ble Union Minister Shri Gajendra Singh Shekhawat.

TECHNICAL SKILLS

Programming & Data Tools: DSA,Python, MySQL, Streamlit, Power BI, Looker Studio, Matplotlib, Plotly, Pandas, NumPy, TensorFlow, PyCaret, LangChain, Scikit-Learn, Git, NLP, LLMs- Ollama: 3.2., Time Series Analysis