

# DEBARSHI CHAKRABORTY

MSc in Big Data Analytics  
RKMVERI, Belur Math, West Bengal, India

✉ [debarshi2933@gmail.com](mailto:debarshi2933@gmail.com)    [in](https://www.linkedin.com/in/debarshi-chakraborty-664726216) [debarshi-chakraborty-664726216](https://www.linkedin.com/in/debarshi-chakraborty-664726216)    [github](https://github.com/debarshi29) [debarshi29](https://github.com/debarshi29)    ☎ 9038564470



## PROJECTS

- **Real Time (T+0) Trade Settlement for the US Market**  
Agentic AI | LLM | DLT [\[Link\]](#) June 2025 - Ongoing
  - Designed a permissioned blockchain system using Hyperledger Besu and IBFT-2 consensus for atomic delivery-versus-payment (DvP) settlement of tokenized securities and cash.
  - Integrated Agentic AI for real-time trade validation, liquidity checks, and exception handling.
  - Utilized large language models (LLMs) for compliance reporting and anomaly detection.
  - Designed and ran Monte Carlo simulations comparing T+0 with T+1 models, demonstrating a 91.7% reduction in counterparty risk exposure.
  - Planned stress testing to simulate 10,000+ trades per day under peak-load conditions to evaluate system performance and scalability.
- **Deep Learning based Document Summarization and Question Answering**  
Deep Learning | NLP | DistilBERT [\[Link\]](#) Jan 2025 - May 2025
  - Implemented a GRU-based Seq2Seq model with attention for document summarization.
  - Fine-tuned DistilBERT for extractive question answering on benchmark datasets.
  - Evaluated using ROUGE, BLEU, BERTScore, and Exact Match metrics.
  - Deployed the application using Streamlit for an interactive user interface.
- **Distributed Inference for Large Language Models**  
Distributed Computing | C++ | Python [\[Link\]](#) Jan 2025 - May 2025
  - Set up a distributed computing cluster to deploy LLMs such as DeepSeek R1 Distill and LLaMA 3.2B Instruct, achieving a 2-4× increase in tokens/sec throughput.
  - Conducted an extensive literature review on LLM inference strategies including tensor, model, and data parallelism.
  - Analyzed GitHub repositories of distributed LLM systems; documented architecture, scaling behavior, and memory layout.
- **Mood-Based Music Recommendation System**  
Scikit-learn | Pandas | Matplotlib [\[Link\]](#) Sep 2024 - Nov 2024
  - Built a classification model using Spotify data to categorize songs into 7 mood categories with 92% accuracy.
  - Developed a content-based recommendation engine using cosine similarity.
  - Resolved class imbalance with SMOTE and improved accuracy using ensemble methods.

## COURSEWORK

- |   |                                      |
|---|--------------------------------------|
| • Machine Learning                        | • Data Structures & Algorithms       |
| • Deep Learning & NLP                     | • Probability & Stochastic Processes |
| • Distributed Computing & Graph Databases | • Finance & Econometrics             |
| • Computer Vision                         | • Time Series Analysis               |
|   | • Reinforcement Learning             |

## ACHIEVEMENTS/CERTIFICATIONS

- Research paper titled “Real Time Trade Settlement for the US Market” accepted at the **3rd World Conference on Communication & Computing (IEEE WCONF)** and will be published in the proceedings.
- Qualified for IIT JAM 2024(Mathematics) conducted by IIT Madras
- Optimization Theory and Algorithms, NPTEL

## EXPERIENCE

- Summer Research Intern**  
**Indian Institute of Technology, Guwahati**  
📅 May 2025 - July 2025    📍 Guwahati, India
- Collaborated with PhD researchers to design algorithms for the **Popular Matching Problem** in subcubic graphs and graphs with maximum degree 7.
  - Developed and analyzed **greedy-based algorithms** to determine the existence of popular matchings under bounded-degree constraints.
  - Implemented prototype solutions in Python, and conducted theoretical performance evaluations.
  - Gained hands-on experience in graph theory, complexity analysis, and algorithm design in a research setting.

## EDUCATION

- **Ramakrishna Mission Vivekananda Educational and Research Institute, Howrah**  
**MSc in Big Data Analytics**  
📅 2024 – Present
- **Ramakrishna Mission Vivekananda Centenary College**  
**BSc(H) in Mathematics**  
📅 2021 – 2024    CGPA: 7.63

## TECHNICAL SKILLS

- **Programming Languages:** Python, Java, R
- **Libraries & Frameworks:** NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, PyTorch, OpenCV, Neo4j, LangChain, LangGraph
- **Tools & Platforms:** Git, GitHub, Docker, VS Code, Jupyter Notebooks, Windows, Linux (Ubuntu)

## VOLUNTEERING

- **Placement Volunteer, RKMVERI**  
– Assisted the Placement Cell for the Batch of 2024-26
- **Perceptron Volunteer, RKMVERI**  
– Assisted in managing and organizing events at the University's Annual Tech Fest, **Perceptron 2025**