

Sougata Rana

M.Tech – Computer Science and Data Processing

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PROFESSIONAL SUMMARY

I have completed M.Tech in Computer Science and Data Processing at IIT Kharagpur with AIR 281 in GATE Mathematics 2022. Experienced in developing deep learning models including CNNs for autonomous driving and flower classification, and LSTMs for financial forecasting. Proficient in Python, SQL, and C++ with a strong background in data structures, algorithms, and market segmentation analysis.

EDUCATION

Indian Institute of Technology (IIT) Kharagpur	2024 – 2026
M.Tech in Computer Science and Data Processing	CGPA: 7.81/10
University of Calcutta	2019 – 2021
M.Sc. in Mathematics	CGPA: 6.87/10
Midnapore College (Autonomous)	2016 – 2019
B.Sc. in Mathematics	Marks: 74.25%
WBCHSE – Higher Secondary (2016): 86.8% WBBSE – Secondary (2014): 83.7%	

TECHNICAL SKILLS

Programming Languages: Python, SQL, C++

Machine Learning and Deep Learning: CNN, LSTM, PCA, K-Means Clustering, NLP

Libraries and Frameworks: TensorFlow, Keras, NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn

Software and Tools: MySQL, Tableau, MS Excel, Jupyter Notebook, VS Code, Google Colab

Concepts: Data Structures and Algorithms, Object-Oriented Programming, Database Management Systems, Operating Systems, Probability and Statistics, Linear Algebra, Convex Optimization

INTERNSHIPS

Machine Learning Intern	June 2025 – August 2025
<i>Feyn Labs</i> – Project: EV Market Segmentation Analysis	
- Conducted analysis of global and Indian EV markets using Selenium and BeautifulSoup for web scraping. - Utilized PCA for dimensionality reduction on variables like price, range, and charging time. - Applied K-Means clustering to segment the EV market into 4 distinct consumer preference groups.	

PROJECTS

Flower Classification Using CNN	January 2026-April 2026
<i>M.Tech Project</i> – Dr. Dipankar Ghosh	
- Developed a CNN-based image classification system to identify five flower categories: Daisy, Dandelion, Roses, Sunflowers, and Tulips. - Applied preprocessing techniques including normalization, resizing, and data augmentation. - Built architecture using TensorFlow/Keras featuring convolution, pooling, dropout, and dense layers. - Achieved approximately 74% classification accuracy on test data using OpenCV and Scikit-learn for evaluation.	
Machine Learning Models in Autonomous Self-Driving Cars	August 2025 – December 2025
<i>M.Tech Project</i> – Dr. Dipankar Ghosh	
- Designing a CNN-based model for autonomous driving, focusing on lane detection and steering angle prediction. - Preprocessing driving datasets (images and video) with data augmentation to improve model generalization. - Training deep learning models to map camera inputs directly to steering commands for real-time inference.	
Stock Price Prediction	March 2025 – April 2025
<i>Deep Learning Project</i> – Dr. Buddhananda Banerjee	
- Engineered LSTM and CNN models in TensorFlow to predict Bitcoin prices, identifying LSTM as more accurate. - Tuned the LSTM model using ReLU activation and the Adam optimizer to achieve lower RMSE. - Handled missing values and applied MinMax scaling, evaluating results with RMSE and MAPE metrics.	

POSITIONS OF RESPONSIBILITY

Freelancer – Chegg India
Accurately solved over 1,200+ advanced Mathematical problems for students on the platform.

AWARDS AND ACHIEVEMENTS

- Secured All India Rank (AIR) 281 in GATE Mathematics 2022 with a score of 572.
- Qualified the 24th West Bengal State Eligibility Test (WBSET 2023), ranking in the top 6%.