

DEBANGSHU BOSE | 23CL60R18

EARTH SYSTEM SCIENCE AND TECHNOLOGY



EDUCATION			
Year	Degree/Exam	Institute	CGPA/Marks
2025	M.TECH	IIT Kharagpur	7.92 / 10
2018	Master of Science (Mathematics)	Netaji Subhas Open University	61.90%
2016	Bachelor of Science, Honors (Mathematics)	University of Calcutta	48.62%
2013	All India Senior Secondary Certificate Examination	CBSE	84.80%
2011	Secondary School Examination	CBSE	9.4 / 10
		WORK EXPERIENCES	

Mathematics Lecturer | Narula Institute of Technology, Kolkata.

[Oct '21 - Jun '23]

• As a Mathematics lecturer for B. Tech students, I taught the curriculum of Engineering Mathematics and Statistics. The subjects covered encompassed Linear Algebra, Probability, Calculus, Modern Algebra, Number Theory, Numerical Analysis, Statistical Distribution, Regression, and Principal Component

PROJECTS

Advance House Price Prediction | Data Analysis | Autumn 2023

• Performed Exploratory Data Analysis, Feature Engineering and Feature Selection (using Lasso Regression) | Model Development : Created a Pipeline to predict the price using the given features and found R-Square value to be 0.75 | Model Evaluation and Refinement : Performed Ridge Regression on the train data and obtained R-Square value on test data to be 0.64 | Performed a second order polynomial transform on the train and test data | Fitted Ridge regression on the train data and obtained R-Square value on the test data to be 0.70

Rain prediction in Australia | Machine Learning | Winter 2023-2024

• Building the model: Used Linear and Logistic regression, KNN, Decision Tree, Support Vector Machines | Model Evaluation: Calculated the accuracy of each method using evaluation metrics Accuracy Score, Jaccard Index, F1 Score, LogLoss, MSE, R-Square value | Made a report of the accuracy scores against each classifier to find the best suited model for prediction.

Customer segmentation using k-Means clustering | Machine Learnning | Google Colab | Winter 2023-24
• Performed Exploratory Data Analysis | Feature Engineering and feature selection | Calculated WCSS values | Plotted Elbow Point Graph and found optimum number of clusters to be 5 | Trained the k-means cluster model | Plotting of the clusters with repsect to the chosen features

INTERNSHIPS

Indian Oil Corporation Ltd, Lube Blending Plant, Chennai | Mr. Nibil PS, Lube Safety Manager.

[Dec '23 - Jan '24]

• Engaged in a valuable student internship opportunity at Indian Oil Corporation Limited (IOCL), Chennai, where I gained comprehensive insights into the operational dynamics of the Pump House, intricate processes involved in small can filling and barrel filling, understanding of LOBS (Lubricating Oil Blending Stock), familiarity with Quality Control Lab procedures, and a comprehensive grasp of Supply and Distribution protocols. Subsequently, I proficiently compiled and submitted a comprehensive report encapsulating the diverse range of information and knowledge assimilated from my exposure to various departments during the entire duration of the internship.

SKILLS AND EXPERTISE

Languages and DBMS: Python,SQL
Library and Packages: Numpy,Pandas,Matplotlib,Seaborn,Scikit Learn,Scipy
Machine Learning Algorithms: Linear Regression, Logistic Regression, K-Nearest Neighbors, Decision Tree, Support Vector Machines.
Mathematics and Statistics: Linear Algebra, Modern Algebra, Calculus, Number Theory, Probability, Statistical Distributions, Estimation, Regression,

Principal Component Analysis.

Other Softwares: Word, Excel, Powerpoint, Jupyter Noteboook, MySQL

Soft Skills: Team work, Time Management, Problem Solving and critical thinking, Fast learner, Strong written and verbal communication, Teaching.

COURSEWORK INFORMATION

Data Analytics in Earth System Science | Computational Methods in Earth System Science | Oceanography | Atmospheric Dynamics | Weather Analysis and Prediction | Geophysical Fluid Dynamics

CERTIFICATIONS

Data Analytics with Python | IBM Skills Network | Coursera | Data preprocessing | EDA | Model Development | Model Evaluation and Refinement Machine Learning with Python | IBM Skills Network | Coursera | Machine Learning Algorithms | Evaluation metrics

AWARDS AND ACHIEVEMENTS

Attained a notable achievement by securing an impressive All India Rank of 425 in the Graduate Aptitude Test in Engineering (GATE) 2023, showcasing a commendable percentile of 96.58%.

POSITIONS OF RESPONSIBILITY

Academia-Industry Conclave Co-ordinator | IIT Kharagpur

• Had the privilege of serving as a representative for the Centre for Ocean, River, Atmosphere and Land Sciences (CORAL) at the Academia-Industry Conclave held in December 2023. This remarkable opportunity provided me with a platform to engage in meaningful interactions with professionals from various industries and individuals with diverse backgrounds. This experience significantly contributed to the enhancement and fortification of my communication skills through the exchange of ideas and insights in a dynamic and collaborative environment.

Socio-Cultural Secretary, BR Ambedkar Hall of Residence | IIT Kharagpur

[Oct '23 - Present]

• Efficiently orchestrated the opulent Diwali festivitial in 2023, famously recognized as the Illumination spectacle, held at the prestigious BR Ambedkar Hall of Residence. Notably, this triumph was realized while adhering to the assigned budgetary constraints of 1.5 Lakhs. Serving as an indispensable member within the dynamic 10-person core team, I played a pivotal role in not only successfully executing the event but also in ensuring the meticulous preservation and jubilation of the rich cultural legacy of IIT Kharagpur.