Roudranil Das

📍 *Kolkata, West Bengal, India*   🌐 https://roudranil.github.io/

✉ roudranil@cmi.ac.in   in roudranil-das   ⌗ Roudranil   📞 +91-9874137286

Education

2022 - 2024 *(ongoing)* *Tamil Nadu, India*	**M.Sc. Data Science** **Chennai Mathematical Institute** <u>SGPA</u> (after semester 1): 9.5
2019 - 2022 *West Bengal, India*	**B.Sc. Mathematics (Honours)** **St. Xavier's College (Autonomous), Kolkata** <u>CGPA</u>: 8.46

Projects

Jan 2022 -
Feb 2022
⌗ Link

Comparative analysis of Decision Trees and Naive Bayes in Classification Problems
Tools used: Python, scikit-learn, matplotlib, pandas, optuna
– Analysed performances of the two algorithms in classification of balanced and unbalanced datasets.
– Performed feature engineering to improve predictive metrics (accuracy and recall) by 3-4 percentage points.
– Carried out hyperparameter tuning for both models and cost complexity pruning for decision tree to improve predictive metrics and generalisability further.

Dec 2022
⌗ Link

Audio Classification with CNN-LSTM networks
Tools used: Python, PyTorch, torchaudio, pandas
– Analysed audio samples of the words "zero" to "nine"
– Trained a baseline CNN, a CRNN and a parallel CNN-RNN model with the CNN-RNN model achieving 84% accuracy on test set (+15% over CRNN) and F1-score of 84%.

Oct 2022 -
Dec 2022
⌗ Link

Deforestation and Forest Conversion
Tools used: R, ggplot, tidyverse, R-Shiny | Chennai Mathematical Institute
– Created visualisations to better understand causes for deforestation. [Report]
– Built a dashboard web app with R Shiny for the above. [Dashboard]

Oct 2021 -
May 2022
⌗ Link

Bayesian Analysis of Efficacy of the ChAdOx1 nCoV-19 (AZD1222) Vaccine
Tools used: Python, PyMC3, Matplotlib | St. Xavier's College, Kolkata
– Used Bayesian inference to compute the vaccine efficacy.
– Cross checked vaccine efficacy using standard and hierarchical Bayesian models with PyMC3.

ongoing
⌗ Link

Financial Literacy among 18-35 Year Olds
Tools used: Python, NumPy, pandas, Statsmodels, Matplotlib
– Collected responses to questions measuring financial literacy and scored them.
– Performed exploratory statistical analysis to determine factors of financial literacy

Technical Skills

Languages	Python, MySQL, R, C, LaTeX
Tools/Frameworks	Minitab, NumPy, Pandas, Matplotlib, Scikit-Learn, ggplot2, Git, PyTorch

Key Courses Taken

Postgraduate	Python and Data Structures, Statistics and Visualisation with R, RDBMS and SQL, Machine Learning*, Distributed computing and Big Data*, Design and analysis of algorithms* * *indicates ongoing courses*
Undergraduate	Linear algebra, Real analysis, Multivariable Calculus, Differential equations, Mathematical Statistics, R, C
Others	Data Analysis with R Prorgamming, Algorithms, Supervised ML

Awards and Achievements

2017	**Jagadish Bose National Science Talent Search Junior Scholarship Awardee**
2019	**Jagadish Bose National Science Talent Search Senior Scholarship Awardee**
2019	**INSPIRE Scholarship for Higher Education, Dept. of Science and Technology, Government of India**

Positions of Responsibility

CMI *2022*	**Placement Representative** Serving as a representative on the CMI Placement Committee.