Koustav Chowdhury

Postgraduate Student in Statistics

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Koustav-Chowdhury73

Introduction

I am a first-year Masters student of Statistics (**M.Stat**) at the Indian Statistical Institute, Kolkata. I have also completed my Bachelor of Statistics (**B.Stat**) at the Indian Statistical Institute, Kolkata. I am also a **KVPY Fellow**. My research interests include Machine Learning, Statistical Learning Theory, Optimization Theory, Clustering and applications in these fields that address practical challenges. I thrive in inter-disciplinary environments. I am proficient in R, C, Python, LaTeX, MATLAB, MS Office, and G-Suite.

Education

2022–2025 **B.Stat. (Hons.)**, *Indian Statistical Institute*, Kolkata, India
Aggregate Percentage: 92.68% (till 5th semester)

2021–2022 **Higher Secondary Education**, *Jenkins School*, Cooch Behar, India
Percentage: 96.4%

Till 2020 **Primary Education**, *St. Mary's High School*, Cooch Behar, India
Class X Marks: 94%

Research Projects

2025 **Temporal Sentiment Analysis – A Statistical Exploration of Societal Distress and Reaction**, *Indian Statistical Institute*, Kolkata, India
Supervisor: Prof. Kiranmoy Das and Prof. Anil K. Ghosh
Modelling momentary anger across time caused due to incidents that triggered an immediate and widespread emotional response throughout the city. Explaining variations in various behavioral responses for various sections of society. Modelling was done using GEE equations and Quasi-Likelihood optimization. Data was collected through surveys across households all over Kolkata, India.
[**PPT**]/[**Report**]

2025 **Time Series Analysis of Sector-wise GDP in India using MOSPI Data**, *Indian Statistical Institute*, Kolkata, India
Supervisor: Prof. Kiranmoy Das and Prof. Anil K. Ghosh
A comprehensive time series analysis on various sectors of GDP such as Agriculture, Fishing, etc. The analysis includes, using Jump Regression for trend estimation, SARIMA Model fitting and forecasting.
[**PPT**]/[**Report**]

2025 **Studying the Structure of the Local Neighborhood of a Randomly Selected Vertex of a Large but Sparse Erdős-Rényi Binomial Random Graph**, *Indian Statistical Institute*, Kolkata, India
Supervisor: Prof. Antar Bandyopadhyay
Statistically studying the local (d-depth) neighborhood of a randomly selected vertex of a large but sparse Erdős-Rényi random graph through simulations and theory available in the field.
[**PPT**]/[**Report**]

2024-2025 **Robust Clustering using Median of Means Estimator**, *Indian Statistical Institute*, Kolkata, India

Supervisor: Prof. Swagatam Das

Developing a convex clustering algorithm fused with the Median of Means estimator to introduce robustness. Applying it to standard datasets, Reporting the simulation results and providing theoretical guarantees of convergence and finite sample bounds on the cost function.

[Submitted to NeurIPS Conference 2025]

2024 **Demographic Analysis and Comparative Study of Maharashtra and Manipur using NFHS-5 dataset**, *Indian Statistical Institute*, Kolkata, India

Supervisor: Prof. Kajori Banerjee

A study aimed to provide insights into the disparities and developments that shape Maharashtra and Manipur, the socio-economic dynamics, health indicators, and lifestyle patterns that define the populations of these two diverse regions offering an understanding of India's multifaceted socio-economic landscape. Key metrics will include income and expenditure, education levels, and reproductive health.

[**PPT**]/[**Report**]

2023 **Reconstructing Signals from Noisy Data**, *Indian Statistical Institute*, Kolkata, India

Supervisor: Prof. Probal Chaudhuri

Utilizing moving average estimators for denoising noisy signals to reconstruct the original signal.

[**Report**]

2022 **Exploratory Data Analysis of Concrete Strength**, *Indian Statistical Institute*, Kolkata, India

Supervisor: Prof. Kiranmoy Das

Fitted a multivariate regression model, analyzed important/redundant variables, and optimized feature sets.

[**Report**]

Internships and Experiences

Summer 2025 Incoming Intern at **Big Data Summer Immersion at Yale** organized by Yale School of Public Health.

Summer 2025 Invited for Nurture Camp at IIT Bhubaneswar for qualifying Madhava State Level 2025.

Spring 2025 Attended **Winter School of Deep Learning** at Indian Statistical Institute, Kolkata

Winter 2024 Data Analyst at Innover Capital Solutions Pvt Ltd.

Winter 2021 Attended **VIJYOSHI Camp** organized by IISc Bangalore.

Achievements and Scholarships

2025 Madhava Contest State-Level Qualification and invitation for Nurture Camp

2023 Madhava Contest State-Level Qualification

2022 JEE Mains: 99.967 percentile (AIR: 369)

2022 JEE Advanced: AIR 808

2022 WBJEE: Rank 5

2022 ISI Entrance Test: Rank 17 with scholarship

2021–2022 KVPY Fellowship (SA AIR: 443; SX AIR: 437)

2021 Qualified NTSE Stage-I (Rank: 43) and JBNSTS with scholarship

Various Prize money awarded for commendable marks in 1st, 3rd, and 4th semesters

Technical Skills

Programming R, C, Python, MATLAB

Document Preparation	LaTeX, MS-Office, G-Suite
Mathematical Techniques	Statistical Modeling, Optimization, Graph Theory