

Koustav Chowdhury

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Koustav-Chowdhury73

Introduction

I am a third-year undergraduate student of Statistics at the Indian Statistical Institute, Kolkata, and a KVPY Fellow. My research interests include Machine Learning, Statistical Learning Theory, and Deep Learning. I also enjoy exploring topics in Mathematics, such as Graph Theory and Optimization Techniques. I am proficient in R, C, Python, LaTeX, MATLAB, MS Office, and G-Suite.

Education

- 2022–Present **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 **Time Series Analysis of Sector-wise GDP in India using MOSPI Data**, *Indian Statistical Institute*, Kolkata, India, Guide: 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, trend and seasonality estimation, ARIMA Model fitting and forecasting
- 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, Guide: 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.
- 2024-2025 **Robust Clustering using Median of Means Estimator**, *Indian Statistical Institute*, Kolkata, India, Guide: 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.
- 2024 **Demographic Analysis and Comparative Study of Maharashtra and Manipur using NFHS-5 dataset**, *Indian Statistical Institute*, Kolkata, India, Guide: Prof. Kajori Banerjee
A comparative analysis to illuminate the socio-economic dynamics, health indicators, and lifestyle patterns that define the populations of these two diverse regions. Key metrics will include income and expenditure, education levels, and reproductive health. This study aims to provide insights into the disparities and developments that shape Maharashtra and Manipur, offering an understanding of India's multifaceted socio-economic landscape.
- 2023 **Reconstructing Signals from Noisy Data**, *Indian Statistical Institute*, Kolkata, India, Guide: Prof. Probal Chaudhuri
Utilizing moving average estimators for denoising noisy signals to reconstruct the original signal.
- 2022 **Exploratory Data Analysis of Concrete Strength**, *Indian Statistical Institute*, Kolkata, India, Guide: Prof. Kiranmoy Das
Fitted a multivariate regression model, analyzed important/redundant variables, and optimized feature sets.

Internships and Experiences

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

- 2021–2022 KVPY Fellowship (SA AIR: 443; SX AIR: 437)
- 2021 Qualified NTSE Stage-I (Rank: 43) and JBNSTS with scholarship
- 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
- Various Madhava Contest State-Level Qualification (Scholarship and TIFR Camp)
- Various Prize money awarded for commendable marks in 1st, 3rd, and 4th semesters

Technical Skills

- Programming R, C, Python, MATLAB
- Document LaTeX, MS-Office, G-Suite
- Preparation
- Mathematical Statistical Modeling, Optimization, Graph Theory
- Techniques