Debarshi Chakraborty

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Personal Profile

A Statistics graduate, pursuing Masters and incoming PhD candidate at Iowa State University, Ames, USA. Loves to explore data and play with numbers. Interested to pursue an academic career in future. A learner forever.

Education

Indian Statistical Institute *Kolkata, India*

Master of Statistics *Sept 2021 - Current*

- Specialized in Applied Statistics

St. Xaviers' College (Autonomous) *Kolkata, India*

Bachelor of Science (Hons) in Statistics *July 2017 - October 2020*

- Graduated with first division

Ariadaha Kalachand High School *Kolkata, India*

Standard V- Standard XII *May 2009 - June 2017*

- Specialised in Physics, Chemistry, and Mathematics with Biological Sciences

Research Interests

Inference for High Dimensional Data, Statistical Genomics , Graphical Models , Bayesian Methods , Pattern Recognition , Nonparametric Inference, Time Series Analysis

Projects and Presentations

A Study of Non Gaussian Graphical Models *Kolkata, India*

Indian Statistical Institute *Spring 2023*

- This is my masters final year project. A comprehensive study and literature review of existing methods, discussion on their usability and limitations in different scenarios like large sample and higher dimension. Experiments and Simulations with real and artificial data.
- Mentor : Dr. Arindam Chatterjee, Stat Math Unit, ISI Delhi

Cluster Analysis of Wine Count Data *Kolkata, India*

Indian Statistical Institute *Summer 2023*

- Discriminating between types of wine by looking at their chemical composition. Comparison between several clustering methods.
- Mentor : Srijit Mukherjee, PhD student, Pennsylvania State University

Knockoffs and its Applications *Kolkata, India*

Indian Statistical Institute *Spring 2023*

- Understanding the idea of knockoff in variable selection, compared with shrinkage methods and multiple testing, experiments with data.
- Mentor : Dr. Anil Kumar Ghosh, Stat Math Unit, ISI Kolkata

On a Robust Correlation Coefficient *Kolkata, India*

Indian Statistical Institute *Spring 2023*

- Review of a correlation coefficient which performs better in presence of outliers, discussion of limitations with data based experiments.
- Mentor : Dr. Ayanendranath Basu, Interdisciplinary Statistics Research Unit, ISI Kolkata

Bayesian Failure Probability Prediction of Space Shuttle Data *Kolkata, India*

Indian Statistical Institute *Fall 2022*

- Estimating the probability of failure of a space shuttle launch. use of Bayesian Methods due to small size of data.
- Mentor : Dr. Sourabh Bhattacharya, Interdisciplinary Statistics Research Unit, ISI Kolkata

Predicting Heart Disease using Supervised Machine Learning *Kolkata, India*

Indian Statistical Institute *Fall 2022*

- Classifying an individual whether he/she is prone to heart disease based on several medical test results.
- Mentor : Bilol Banerjee, PhD student, Stat Math Unit, ISI Kolkata

A Study on Gaussian Graphical Models *Delhi, India*

Indian Statistical Institute *Summer 2022*

- Reading project. Exposure to the idea of graphical models and comprehensive literature review of gaussian graphical models.
- Mentor : Dr. Arindam Chatterjee, Stat Math Unit, ISI Delhi

A Comparative Study between some Classification Methods

Indian Statistical Institute

Delhi, India

Spring 2022

- Understanding support vector machines, K-nearest neighbours and investigating about there usability over parametric methods like linear and quadratic discriminant analysis if different situations. Experiments are done with both artificial and real data.
- Mentor : Dr. Deepayan Sarkar, Stat Math Unit, ISI Delhi

A Study on Kernel Density Estimation

Indian Statistical Institute

Delhi, India

Spring 2022

- Limitations of histogram, demonstration of the idea of KDE, choice of kernels, bandwidths and other properties using simulation.
- Mentor : Dr. Isha Dewan, Stat Math Unit, ISI Delhi

Regression Analysis of Petrol Consumption Data

Indian Statistical Institute

Delhi, India

Fall 2021

- Model fitting, outlier detection and other regression diagnostics, remedies to violation of assumptions, finally choosing the model.
- Mentor : Dr. Swagata Nandi, Stat Math Unit, ISI Delhi

Modelling the UEFA Champions' League

St. Xavier's College (Autonomous)

Kolkata, India

Spring 2020

- This is my bachelor's final year project. We try to build a simple mathematical model for the number of goals scored in the UCL over the years, which may be extended for forecasting purposes. Mathematical curve fitting for trend analysis and modeling the rest using ARMA.
- Mentor : Dr. Ayan Chandra, Department of Statistics, SXC Kolkata

Technical Skills

Programming	R, Python, C++,C, HTML
Softwares	RStudio, Microsoft Excel, Minitab, LateX, Tableau

Academic Achievements

2023	**AIR 7,** Graduate Aptitude test for Engineering (GATE), Paper : Statistics	*India*
2021	**AIR 18,** Indian Statistical Institute entrance Examination, Paper : M.Stat	*India*
2020	**AIR 32,** Indian Statistical Institute entrance Examination, Paper : M.Stat	*India*
2017	**Received Inspire Scholarship,** Department of Science and Technology, Government of India	*India*

Extra Curricular Activities

Table Tennis	I was a professional table tennis player from 2004-2019, won several state level medals
Cricket	A die hard cricket lover since childhood, college cricket tournament being the best memory till date
Teaching	Taught undergraduate students Statistics and Mathematics to help out them for different entrance exams
Art	Received Shilpa Visharad degree in Art in the year 2016 from Sarbabharatiya Sangeet-O-Sanskriti Parishad
Swimming	Professionally trained in swimming
Teaching	Taught Statistics and Mathematics to undergrads for different competitive exams
Resources	Maintaining an initiative Statistics Repository on my webpage to compile online free resources for learning Statistics

Languages

English	Professional proficiency
Bengali	Native proficiency
Hindi	Professional proficiency

I herebey declare that all the information provided above are true to best of my knowledge.
References available upon request.