Soumava Pal
Curriculum Vitae

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EDUCATION

Indian Statistical Institute, Kolkata

2019–present	MASTER OF STATISTICS, M.STAT
2016–2019	BACHELOR OF STATISTICS, B.STAT
	71.6%

South Point High School, Kolkata

2016	HIGHER SECONDARY EDUCATION
	96.6%
2014	SECONDARY EDUCATION
	94.2%

COMPUTER SKILLS

BEGINNER	HTML, CSS, Julia, Blender
INTERMEDIATE	C, C++
EXPERT	Python, R, MS Office, LaTeX

SUBJECTS OF STUDY

STATISTICS	Statistical Inference, Parametric and Non-Parametric Methods, Regression Techniques, Multivariate and Categorical Data Analysis, Decision Theory, Optimization, Large Sample Theory, Linear Models, Resampling Techniques
PROBABILITY	Convergence, Markov Chains, Stochastic Processes, Random Graphs, Measure Theory, Martingales, Percolation Theory
MATHEMATICS	Linear Algebra, Abstract Algebra, Real Analysis, Complex Analysis, Topology, Discrete Mathematics, Galois Theory, Differential Equations, Functional Analysis
COMPUTER SCIENCE	Data Structures, Numerical Analysis, Design and Analysis of Algorithms

ORIGINAL WORK

JANUARY 2017

An algorithm to find solutions (x, y) to $x^y = y^x = k$ for real numbers
Association of International Mathematics Education and Research, Second Meet, Bengaluru, Karnataka

Presented my algorithm for finding a solution to an implicit equation at a mathematics conference

DECEMBER 2016

An elementary proof of Liu's inequality for acute triangles and an extension to all triangles
6th *Annual International Conference on Computational Mathematics, Computational Geometry and Statistics, 2017*

Work was selected for presentation at conference

PROJECTS

SUMMER 2017

Swagatam Das, Associate Professor,
Electronics and Communication Sciences Unit,
Indian Statistical Institute, Kolkata
Implementing clustering algorithms in machine learning

Implemented a few clustering algorithms like k-means, k-means++, g-means, worked them on synthetic and some real data and used non-negative matrix factorization to extract sparse and easily interpretable factors in clustering problems

SEPTEMBER 2016

Smarajit Bose, Professor,
Interdisciplinary Statistics Research Unit,
Indian Statistical Institute, Kolkata
Occurrence of Zipf's law in data by ranking

Presented a survey of popping up of Zipf's Law in natural language corpus.

WINTER 2019

Soumendu Sundar Mukherjee, INSPIRE Faculty,
Interdisciplinary Statistics Research Unit,
Indian Statistical Institute, Kolkata
Missing Values in Contingency Tables

Studied the problem of data missing in $3-$dimensional contingency tables making the data partially classified, common in medical trials

SUMMER 2019

Bimal K. Roy, Professor, Applied Statistics Unit,
Indian Statistical Institute, Kolkata
Estimating size of a tiger population from pugmark data

Estimating population size from available data of paw impressions in a forest using methods of clustering and maximum likelihood estimation

SUMMER 2020

Arup Bose, Professor, Statistics and Mathematics Unit,
Indian Statistical Institute, Kolkata
Random Matrices and Free Probability

Studying a concept of "independence" of variables whose density or distribution need not be defined to generalize the concept of random variables using moments and cumulants and realizing eigenvalues of non-Hermitian matrices

FALL 2018

Goutam K. Paul, Assistant Professor,
Cryptology and Security Research Unit,
Indian Statistical Institute, Kolkata
Studying prime gaps and a conjecture in number theory

Studied Firoozbakht's conjecture and it's co-dependence with conjectured upper bounds on the gap between two consecutive primes

ACHIEVEMENTS

2018 **All India Rank 6**
Madhava Mathematics Competition (MMC)
Selected to Attend MMC Orientation Camp

2017 **International Rank 1764**
Pre-Elimination Round, SnackDown, Codechef
Rank 2
Cartooning, Integration, ISI Fest

2016 **All India Rank 1497**
Joint Entrance Examinations, JEE Mains
State Rank 296
West Bengal Joint Entrance Examination
Selected for National Training Camp
International Linguistics Olympiad
International Institute of Information Technology, Hyderabad
Honorable Mention
Panini Linguistics Olympiad
Selected as Participant
Indian National Informatics Olympiad

2015 **Among Top 30 in State**
Zonal Informatics Olympiad
State Rank 2
Association for Improvement in Mathematics Teaching
Participant
Indian National Mathematics Olympiad
Rank 3 in Training Camp
Mathematics Talent Reward Programme
Integration, Indian Statistical Institute

2014 **Awarded KVPY Scholarship**
Kishore Vaigyanik Protsahan Yojana
State Rank 22
Regional Mathematics Olympiad
International Rank 143
International Mathematics Olympiad
aff. Science Olympiad Foundation (SOF)

2013 **Selected for Training Camp**
Mathematics Talent Reward Programme
Integration, Indian Statistical Institute

2012-13 **State Rank 12, Inter-School Rank 1**
Wiz National Spell Bee Competition

2010-2013 **All India Rank 46, 117, 144, 60**
(RESPECTIVE *All India Maths Science Talent Examination*
RANKS FOR **International Rank 271,276,299,173**
2010-2013) *SOF International Mathematics Olympiad*
International Rank 1544, 9447, 111, 199
SOF National Science Olympiad

2008-2012 **National and Regional Champion**
Brainobrain Abacus Competition

2006-2008 **Distinction**
Mathematics, Computer, English, Science
International Assessment for Indian Schools, Macmillan

POSITIONS OF RESPONSIBILITY

- **Assignment Solving Expert** - Assignment solving platforms viz. *Assignment Experts, Chegg*

- **Cultural Head** - ISI Fest, Integration, 2020

- **Organizing Head** - **Mathematics Talent Reward Programme (MTRP)**, ISI fest, Integration 2017, 2018

- **Organizer** - *Inter-Batch Music and Movies Quiz,* 2017, 2018

ACTIVITIES OF INTEREST

- **Participant** - **Qriosity, Open Quiz**, *Jadavpur University*, 2018

- **Completed formal education** in **Fine Arts** till 6th Year, with a *Junior Diploma in Fine Arts* under the affiliation of **Rabindra Bharati University**

- **Participant** - **TCS IT Wiz** 2015

- **Completed** the *Green Revolution Global Certification Program, An Initiative by International Center for Culture and Education to Educate, Inspire and Act Against Climate Change*

- **All-Rounder of the Year Award** *(M.P. Birla Scholarship)* in High School, 2013

EXTRACURRICULAR ACTIVITIES

- exploring music, movies, artforms and cultural genres

- love reading and collecting books

- keeping up with information: scouring the Internet and Wikipedia

- solving Rubik's cube and it's variants

- painting

- playing the violin, mouth organ