



# Mohammad Shaan

Bachelor's in Statistics

Indian Statistical Institute, Kolkata

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Course	College/University	Year	CGPA/%
B.Stat	Indian Statistical Institute	2024-25	79.2
Intermediate/+2	Bharatiya Vidya Bhavan, Kolkata	2024	95.2
High School	Bishop Morrow School, Krishnagar	2022	97.0

## SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 32** in ISI B.Stat Entrance Examination [2024]
- Secured **CRL Rank 4256** in JEE Advanced [2024]
- Secured **CRL Rank 6762** in JEE Mains [2024]
- Secured **CRL Rank 144** in WBJEE [2024]
- Selected as a **JBNSTS STST and JTST Scholar** [2023]
- Qualified **Indian Olympiad Qualifier in Mathematics (IOQM)** [2024]
- Achieved **Global Rank 59** in Optiver Trade-a-thon Challenge [2025]

## ACADEMIC PROJECTS & INTERNSHIPS

- Research Intern | Indian Statistical Institute, Kolkata** [May'25–Present]
  - Working under **Prof. Gopal Krishna Basak** on a reading project involving stochastic processes and modern finance.
  - Exploring Markov chains, Poisson processes, and applications in risk modeling, options, and market microstructure.
- Research Intern | Indian Statistical Institute, Kolkata** [May'25–Present]
  - Working under **Prof. Sourabh Bhattacharya** on a critical study of **Bayesian decision theory**.
  - Comparing Bayesian approaches to classical and machine learning paradigms with a focus on theoretical paradoxes and practical performance in decision-making under uncertainty.

## PROJECTS

- Stochastic Processes and Applications in Finance | Prof. Gopal Krishna Basak** [May'25–Present]
  - Exploring Markov chains, Poisson processes, and Brownian motion for use in modern financial models.
  - Applying stochastic concepts to risk modeling, market microstructure, and option pricing; documenting progress on a GitHub Pages site.
- Bayesian Decision Theory vs Classical and Machine Learning Paradigms | Prof. Sourabh Bhattacharya** [May'25–Present]
  - Conducting a critical theoretical comparison of Bayesian, frequentist, and ML decision frameworks.
  - Focusing on paradoxes in classical methods and practical success of Bayesian reasoning in uncertain environments.
- Centre-wise Analysis of NEET 2024 Scores | Dr. Debasis Sengupta** [Jul'24]
  - Investigated outlier behavior and anomalies in NEET score distributions using exploratory data techniques.
  - Conducted as part of coursework for Statistical Methods-I.
- Bridge Reliability and Crossing Probability | Dr. Arnab Chakraborty** [Mar'25]
  - Modeled bridge crossing as a graph with independently failing edges; computed success probability via simulation.
  - Part of Probability Theory-II coursework.
- Randomized Algorithm for  $k^{th}$  Order Statistic | Prof. Goutam Paul** [Oct'24]
  - Implemented randomized partitioning (QuickSelect) to efficiently find order statistics.
  - Project under Programming and Data Structures coursework.

## CERTIFICATIONS & WORKSHOPS

- Google Cybersecurity Professional Certificate** (Coursera) – Completed [May 2025]
- CS50: Introduction to Programming with Python** (HarvardX) – Completed [June 2025]
- Summer Programme on Mathematics of Data Security**, IIT Madras [May 2025]
  - Attended lectures and discussions on the mathematical foundations of cryptography and secure communication.
  - Covered topics such as modular arithmetic, RSA, finite fields, elliptic curves, and post-quantum cryptographic protocols.

## RELEVANT COURSES

- **Mathematics:** Linear Algebra, Real Analysis, Multivariable Calculus
- **Statistics:** Probability Theory I & II, Statistical Methods I & II
- **Computer Science:** Programming and Data Structures (C & Python), Discrete Mathematics
- **Other:** Physics, Communication Skills

## SKILLS & INTERESTS

- **Programming Languages:** Python, R, LaTeX
- **Tools & Libraries:** NumPy, SciPy, Matplotlib, GitHub, Jupyter
- **Mathematical Skills:** Probability Theory, Linear Algebra, Statistical Inference, Randomized Algorithms
- **Interests:** Quantitative Finance, Bayesian Statistics, Decision Theory, Cybersecurity, Machine Learning

## POSITIONS OF RESPONSIBILITY

- **Organizing Team Member | Quizzicles Competition** [Apr'25–Present]
  - Managed question setting, paper design, and test logistics for physics and mathematics contests.
  - Conducted contests for Classes 8–12 and First-Year Undergraduates.

## EXTRACURRICULAR ACTIVITIES

- Interested in **recitation** and reading fiction and non-fiction story books.
- Enjoy playing **cricket**, **badminton**, and **table tennis** during leisure time.
- Passionate about logical thinking; regularly play **chess**, solve **Sudoku**, and attempt **cryptic puzzles**.