

SHYAM IYER

(+91)-91-679-32101 \diamond shyam.iyer@iitb.ac.in

EDUCATION

Indian Institute of Technology Bombay, Mumbai, India

2019 - 2023

- **Major:** Bachelor of Technology in Engineering Physics | **CPI:** 8.72/10
Relevant courses: Statistical Mechanics, Non-Linear Dynamics, Physics of Biological Systems (*Physics*)
Calculus, Linear Algebra, Differential Equations, Numerical Analysis, Data Interpretation & Analysis (*Mathematics*)
- **Minor:** Computer Science and Engineering | **CPI:** 8.75/10
Relevant courses: Computer Programming, Introduction to Machine Learning, Logic for CS, Computer Networks

New York University, Courant Institute of Mathematical Sciences

enrolling 2023 - 2024 (exp)

- **Major:** Master of Science in Mathematical Finance

PROFESSIONAL EXPERIENCE

Barclays Corporate and Investment Bank | Intern Analyst

May '22 - Jul '22

Part of the Electronic Trading Desk in Mumbai analysing trade data for US Equities Markets

- Experimentally demonstrated significant **price improvement** as a result of a novel liquidity discovery algorithm
 - Employed statistical functions of the **SciPy** package as well as Numpy and Pandas on **Python**
- Augmented internal reports with **30+** trend visualisations for improved client profiling on the LX Darkpool
 - Utilised **PySpark** and **SQL** on Hadoop clusters to aggregate billions of rows of trade data into useful trends
- Gained significant technical and **financial knowledge** from interactions with executives from each vertical

QuHu | Backend Software Intern

Jul '21 - Apr '22

Worked in a 30-member team of individuals launching India's first unique social audio platform

- Developed the backend **REST API** infrastructure using **Spring Java** for an Android application frontend
- Incorporated an **end-to-end** user and post **management service** for blocking and reporting content
- Managed the MongoDB and SQL **Databases on AWS** and completed a migration project to **Amazon RDS**

RESEARCH EXPERIENCE

Modelling the Bicoid Protein Gradient in the Drosophila Embryo

Aug '22 - May '23

Prof. Mithun Mitra & Prof. Amitabha Nandi | Department of Physics

- Studying **stochastic models** for the Synthesis, Diffusion and Degradation equation of the Bicoid gradient to find a closed form solution for the relation between characteristic length of diffusion and the length of the embryo
- Constructing a hypothesis for the two-species **fast & slow state model** to solve for the diffusion coefficient

POSITIONS OF RESPONSIBILITY

Institute Literary Arts Secretary | Institute Cultural Council, IIT Bombay

Apr '21 - May '22

Led a 7-member council as an elected representative of 10,000 students, organising 30+ events annually

- Expanded the Inter Institute **Scrabble League** to **8 IITs** as **Overall Coordinator**, heading a team of 16 for the second annual inter-collegiate edition garnered the participation of **120 students** across **168 matches**
- Strengthened quizzing culture with Summer and Winter League campaigns; achieving a **250% increase** in page visits and **900% increase** in participation through consistent activity and a point-based leaderboard system

Teaching Assistant | IIT Bombay

BB101 (Biology) — Instructors: Prof. Ambarish Kunwar, Prof. Neeta Kanekar

Apr '21 - Jun '21

- Academically mentored a group of **80** undergraduate students via weekly problem solving and doubt sessions

PH438 (Statistical Physics) — Instructor: Prof. Mithun Mitra

Jan '23 - May '23

- Conducting tutorial discussions and help sessions for **50+** third year undergraduates and evaluating exam papers

TECHNICAL STRENGTHS

Programming Languages C++, Python, Java, JavaScript, MATLAB, ROOT

Development Tools Bash, PySpark, AWS, SQL, MongoDB, HTML, CSS3

EXTRACURRICULAR ACTIVITIES

Quizzing and Literary Arts

- Active participant in various **college-level quiz competitions** and enthusiastic setter of questions on recent affairs
- Stood **3rd place** at **Aqua Regia 2015**, certified by Guinness World Records as **India's Largest Science Quiz**

Volunteering

- Mentored 8 students from low-income backgrounds on interview preparation and **soft skill development** through **personal interaction sessions** associated with Rubicon Foundation, an NGO in 2022
- Raised funds towards **cancer research** for the Terry Fox Foundation in the **Run for Cancer** from 2014 - 2017