MRIGANKA BASU ROY CHOWDHURY

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EXPERIENCE

Product Engineering Intern

Sprinklr

📅 Summer, 2020 📍 Remote/Gurugram, India

- Developed **auto-suggest** (`https://github.com/mbrc12/auto-suggest`, see `https://mbrc12.github.io/sprinklr-final-prez/` for a presentation), a server for *autocompleting and fuzzy correcting phrases (including "Did You Mean"-type suggestions)*, based on data fed to it via a REST endpoint. Written in *Java/Spring* using *Mongo/Redis*.

Visiting Students' Research Programme (VSRP)

Tata Institute for Fundamental Research (TIFR)

📅 Summer, 2019 📍 Mumbai, Maharashtra, India

- Worked on *fixed-budget best-arm-identification problem for Multi-Armed Bandits*, and developed/analysed a model for *optimally choosing problem difficulty levels for a contest* based on distributional assumptions about the skill-levels of the target population.

Google Summer of Code

Typelead

📅 Summer, 2018 📍 Remote

- Details available at `https://github.com/mbrc12/etanol/`. The product, **etanol**, *automatically analyses JVM bytecode and infers (conservatively) the purity and nullability properties* of the methods and fields in (the classes in) a provided JAR. Written in **Haskell**.

ACHIEVEMENTS

Competitive Programming

- **ICPC:** Selected to represent IIT Guwahati at the **44th ICPC World Finals** to be held in Moscow, Russia (ICPC 2019-2020), team **I_See_AC**. **Rank 6** in online round, **3** in Kanpur regionals, **5** in Amritapuri regionals in India.
- **Competitive Programming Websites: Codeforces:** 2312 (International Master), **Codechef:** 2481 (6 stars). Handle: `mbrc` on both websites.
- **Google CodeJam:** In 2019, **Rank 287** in **Round 2**. In 2018, **Rank 423** in **Round 3**.
- **Google Kickstart:** In 2019, **Rank 13** (global) in Kickstart round A.
- **Olympiads in Informatics: Rank 64 (Bronze medal)** in Asia Pacific Olympiad in Informatics (2015), and cleared INOI (Indian National Olympiad in Informatics) in years 2014-2016.
- **Microsoft Q# Contest:** Ranked **15** and **1** in Microsoft Q# Coding Contest (finals and warmup), a Quantum Computing contest.
- **Hackerearth IndiaHacks:** In 2017, within **top 50** globally.
- **Codechef Snackdown:** In 2015, ranked **8th** (India) among highschool and college participants, and was selected to appear for the Codechef Snackdown World Finals, an annual global programming competition organized by Codechef, Directi.

Academics

- **President of India Gold Medal:** Awarded to the student with the highest cumulative grade point (CGPA) amongst all students graduating that year from all departments with the degree of Bachelor of Technology or Bachelor of Design.
- **Olympiads:** Cleared Indian National Mathematical Olympiad (INMO) in 2015 ($\sim$ 35 students selected from India across classes 8-12).
- **Entrance Examinations (2017): AIR 345** (/ $\sim$ 1.3 million) in JEE Mains, **AIR 1012** (/ $\sim$ 0.22 million) in JEE Advanced. **AIR 26** in KVPY SX.

EDUCATION

Ph.D. in Statistics

University of California at Berkeley

📅 2021-

Advisor: Prof. Shirshendu Ganguly
Focus area: I work on problems related to random graphs, spin systems, line ensembles and randomized algorithms.

Bachelor of Technology, Mathematics and Computing

Indian Institute of Technology, Guwahati

📅 2017 – 2021

Final CGPA: 9.96/10

LANGUAGES AND TOOLS

Haskell | Rust (intermediate) | Python | Java
C++
Emacs and Vim | (Arch) Linux

TEACHING

STAT 205A (*Probability Theory*), **STAT 134** (*Concepts of Probability*), **STAT 88/DATA 88S** (*Probability and Mathematical Statistics in Data Science*)

COURSES

- **Computer Science:**
  - **Berkeley:** Randomized and Computation (Randomized Algorithms)
  - **Undergrad:** Computer Architecture, Data Structures and Algorithms (+ Lab), Networks (+ Lab), Operating Systems (+ Lab), Databases (+ Lab), Formal Languages and Automata Theory.

- **Mathematics/Statistics:**
  - **Berkeley:** Classical and High-Dimensional Statistics (STAT 210A, 210B), Advanced Probability (STAT 205B), Statics and Dynamics of Random Surface models (STAT 206), Topics in stochastic PDEs (MATH 278), Partial Differential Equations (MATH 222)
  - **Undergrad:** Linear Algebra, Single & Multivariable Calculus, Real Analysis, Complex Analysis, Optimization, Probability, Discrete Mathematics, Modern Algebra, Scientific (Numerical) Computing (+ Lab), Matrix Computations, Financial Mathematics using Stochastic Calculus (3 courses) + Computational Finance.