

# Saksham Rathi

## Curriculum Vitae

Department of Computer Science,  
Indian Institute of Technology Bombay  
Mumbai—400076  
✉ 22b1003@iitb.ac.in  
📁 [sakshamrathi21.github.io/](https://github.com/sakshamrathi21)

## Education

- 2022 - 2026 **Indian Institute of Technology Bombay** *Bachelor's of Technology*  
Pursuing majors in Computer Science and Engineering (CSE) along with honors and minor in Machine Intelligence and Data Science (CPI - 9.6/10)
- 2020 - 2022 **Disha Delphi Public School, Kota** *Senior Secondary Education*  
Secured 99.0% in CBSE Class 12th Board Examination
- 2008-2020 **Delhi Public School, Kota** *Primary and Secondary Education*  
Secured 98.6% in CBSE Class 10th Board Examination

## Research Experience and Internships

Current **Software Engineering Internship**  
*Citadel, London*

2024 **Applied Scientist Internship**  
*Amazon, Bangalore*

- (a) Worked on Amazon's Large Language Model Olympus and improved its instruction following ability
- (b) Implemented Classifier-free Guidance method to enhance focus on key parts of user queries and system prompts, optimizing the balance between conditional and unconditional probabilities using a hyper-parameter
- (c) Evaluated the performance of Olympus and some open source models on various single and multi-turn datasets

2024-25 **Compressive Lognormal Regression**

*Indian Institute of Technology Bombay. Guide: Prof. Ajit Rajwade.*

- (a) Improving on the current viral load estimators used in compressed sensing pool testing methods for RT-PCR
- (b) Utilizing Bayesian inference to estimate distributions of infected samples and errors in their testing parameters
- (c) Using combinatorial group testing and compressed sensing to improve upon algorithms for deconvoluting pooled tests

## Academic Achievements

- Sep 2022 Secured **All India Rank 18** in **Joint Entrance Examination Advanced** among 250,000 selected students
- July 2023 Secured **Department Rank 12** in a batch of 174 students, in Computer Science and Engineering, IIT Bombay
- July 2023 Awarded the **Institute Academic Prize** for being among the **top 20** out of 1400 students in first year
- June 2023 Achieved **10** Semester Performance Index (**SPI**) by scoring a perfect grade in the Spring Semester of first year
- May 2020 Awarded the **NTSE Scholarship** after a two-tier merit-based procedure by NCERT, Government of India
- May 2021, 2022 Recipient of the **Kishore Vaigyanik Protsahan Yojana**, a coveted fellowship by the Department of Science and Technology, Government of India by securing **All India Ranks 24** and **33** in the SX and the SA streams
- May 2022 Secured **All India Rank 321** in Joint Entrance Examination Main among 900,000 students

## Olympiads and Competitions

- Dec 2022 Among the **top 26** students to clear the Indian National Astronomy Olympiad (INAO) and selected to attend the **Orientation-Cum-Selection Camp** for **International Astronomy Olympiad** (IOAA)
- Dec 2020 Selected among the **top 40** students to clear the Indian National Junior Science Olympiad (INJSO) and selected to attend the **Orientation-Cum-Selection Camp** for **International Junior Science Olympiad** (IJSO)
- Dec 2022 Among the top 300 students selected for the **Indian National Physics Olympiad** conducted by HBCSE
- Dec 2018 Selected among the top 300 students for the **Indian National Mathematics Olympiad**, HBCSE

## Technical Skills

**Programming Languages** C++, Python, HTML, CSS, Git, JavaScript, VHDL, MIPS, Sed, Awk, Shell, Bash

**Software Tools** L<sup>A</sup>T<sub>E</sub>X, Qiskit, GitHub, Autodesk Fusion 360, Arduino, Pygame

**Data Science** Matplotlib, MATLAB, NumPy, Keras, TensorFlow, PyTorch, SciPy, Pandas

**Verbal** Debate, Group Discussion