

Soham Chatterjee

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Education

- **Chennai Mathematical Institute** Chennai, Tamilnadu, India
B. Sc - Mathematics and Computer Science 2021 – Ongoing
- **University of Calcutta** Kolkata, West Bengal, India
B. Tech 1st Year - Electronics and Communication Engineering 2020 – 2021
- **Baranagar Narendranath Vidyamandir** Kolkata, West Bengal, India
Higher Secondary (12th Standard) 2018 – 2020
- **Baranagar Ramakrishna Mission Ashrama High School** Kolkata, West Bengal, India
Secondary (10th Standard) 2008 – 2018

Academic Achievements

- **CMI Entrance** Chennai Mathematical Institute
Entrance exam of Chennai Mathematical Institute 2021
- **NEST** NISER
Entrance exam of National Institute of Science Education and Research (NISER) 2021
- **WBJEE - Rank 1893** WBJEEB
West Bengal Joint Entrance Exam 2020
- **12th Statistics Olympiad - Rank 108** AIMSCS
C R Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS) 2020

Internship

- **Ramanujan's work on theta functions and q -series and their connections with number theory.**
Under Professor [Rupam Barman](#), IIT Guahati during the summer break in May – Jul, 2022.
- **Computational Number Theory and Algebra for Algebraic Complexity Theory**
Under Professor [Nitin Saxena](#), IIT Kanpur during the winter break in Dec – Jan, 2022.
- **Factorization of Formula Arithmetic Circuits in Algebraic Complexity Theory**
Under Professor [Nitin Saxena](#), IIT Kanpur during the summer break in May – July, 2023.
- **Quantum Property Testing and Junta Functions and Partially Symmetric Functions.**
Under Professor [Arijit Ghosh](#), ISI Kolkata during the winter break in Dec – Jan, 2023.

Course Projects

- **Report on Algebraic Geometric Codes:** [Link](#)
Followed the survey: '[Algebraic Geometry Codes](#)' by Ian Blake, Chris Heegard, Tom Høholdt, and Victor Wei and Gil Cohen's [Course](#)
- **Qiskit Implementation of Quantum Circuit of Modular Exponentiation:** [Link](#)
Implemented the paper: "[Quantum Networks for Elementary Arithmetic Operations](#)" by Vlatko Vedral, Adriano Barenco and Artur Ekert

Topics I Learned

- **Math Topics:-**
 - **Analysis:**
 - Real Analysis
 - Euclidean Space
 - Metric Space
 - **Algebra:**
 - Linear Algebra
 - Ring Theory
 - Galois Theory
 - Group Theory
 - Field Theory
 - Commutative Algebra
 - General Topology
 - Complex Analysis
 - Algebraic Topology (Introductory)
 - Algebraic Curves
 - Integral Calculus
 - Probability Theory
 - Differential Equations

- **Computer Science Topics:-**

- **Theoretical Computer Science Topics:**

- Design and Analysis of Algorithms - [Geevarghese Philip](#) and [Samir Dutta](#)
 - Theory of Computation - [Narayan Kumar](#) and [C. Aiswarya](#)
 - Complexity Theory - [Partha Mukhopadhyay](#)
 - Expander Graphs and Application - [Partha Mukhopadhyay](#)
 - Parallel Algorithms and Complexity - [Samir Dutta](#)
 - Algorithmic Coding Theory - [Amit Kumar Sinhababu](#)
 - Algebra and Computation - [Amit Kumar Sinhababu](#)
 - Quantum Algorithmic Thinking - [Partha Mukhopadhyay](#)
 - Discrete Mathematics - [C Ramya](#) & [Partha Mukhopadhyay](#)
 - Arithmetic Circuits - [Nitin Saxena](#)
 - Computational Algebra and Number Theory - [Nitin Saxena](#)
 - Lambda Calculus
 - Introductory Concurrent Programming

- **Other CS Topics:**

- Introduction to Functional Programming (Haskell)
 - Advanced Programming with Python - [Samir Dutta](#)
 - Programming Language Concepts using Java

- **Other Topics:-**

- Classical Mechanics
 - English
 - Economics

Computer Skills

- **Programming Languages:** C (Basic), Python (Intermediate), Haskell (Basic), Java (Intermediate), Unix/Linux Shell Scripting, HTML, CSS
- **Technical Skills:** \LaTeX (Advanced), Markdown, Git, Basic works in terminal, VIM, Obsidian

Hobbies

- Tinkering \LaTeX , Watch Anime, Listen Music (J-pop, Western), Theming linux desktop