

# Abhijay Mitra

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## EDUCATION

Degree / Test	Institute / Board	Year	CGPA / %
B.Tech Instrumentation Eng (minor Computer Science and Eng.)	IIT Kharagpur	July, 2022	9.07 / 10 (9.57 / 10)
All India Senior School Certificate Examination ( CBSE )	DPS Ruby Park	March, 2018	84.4 %
All India Secondary School Examination ( CBSE )	South Point H S	March, 2016	10 / 10

## INTERNSHIP

### Software Engineering Intern | [PROFICIENT VISION SOLUTIONS](#)

Winter' 19

Guide: Professor. Sudipta Mukhopadhyay (Dept of ECE IIT Kharagpur)

- Aimed to **remove rain and fog** from **HD video streams** in **real time**.
- Developed license for product** (encryption of machine details like MAC Id, hard disk id, date of installation) along with user provided details such as id, password, number of concurrent users, and unique details cameras to be granted access.
- Implemented the **RSA algorithm** from scratch for licensing the software, built the pre-processing steps of the fog removal code.
- Incorporated **histogram equalisation** and **stretching**, in **CUDA C** to enhance speed of computation multiple folds.
- Demonstrated the product at **WBP Telecom Office** under foggy conditions generated by smoke from fire.

### Problem Setting Intern | [ALGO ZENITH](#)

Winter' 20

- Developed **problem statements, descriptions and complete solution editorials** of **100 algorithmic programming problems**.
- Wrote **clean working code in C++** and their corresponding I/O for easy understanding of students (batchmates, juniors and seniors)
- Covered topics like **Greedy algorithms, implementations, DP, Graphs, Sparse Table, Segment Trees** in detail in editorials.

## PROJECT

### Software Development | [KHARAGPUR WINTER OF CODE](#)

Winter' 20

Guide: Vipul Goyal, Project: Salesforce Batch to Delete Records

- Created a Salesforce library** using **Apex** as well as **lightning components** to delete multiple records of objects through **batches**.
- Custom conditions** for record deletion, along with the **number of records** to be deleted, and **batch size** could be specified, as per convenience depending on the other processes triggered while calling the batch deletion method, and was handled using **SOQL**.
- Augmented the library by enabling the freedom of **choice of mode** of record deletion i.e. with **sharing or without sharing**.
- Languages** used → Apex, SOQL, Javascript, SOSL, **Frameworks** used → Lightning Components

## COMPETITIONS

- Globally Ranked 443** in Round D and **731** in Round C in **Google Kickstart** **2020**
- Among top **5 %** candidates in **Global Coding Contest** by **Credit Suisse** **2020**
- Qualified for **Facebook Hacker Cup - Round 2**. **2020**
- Finalist of **Overnite Kshitij IIT Kharagpur**, a night long **ACM certified** team competitive programming contest **2020**
- Globally Ranked 5** in June Data Structure and Algorithms Contest and **10** in August Easy organized by **Hackerearth** **2020**

## AWARDS and ACHIEVEMENTS

- Expert** with max rating **1821** on Codeforces ( id → [abhj](#)). **2020**
- 4 star** with max rating **1952** on Codechef ( id → [abhj](#)). **2020**
- Undertook a [Software Engineering Virtual Experience](#) provided by **JP Morgan Chase and Company** **2020**
- Secured All India Rank **2157 (99.83 percentile)** in **JEE Advanced** **2018**
- Secured Rank **92 (99.91 percentile)** in **WBJEE**. **2018**

## COURSEWORK INFORMATION

- Computer Science:** Algorithms I\*, Programming and Data Structures\*, Selected Topics in Algorithms, Genetic Algorithms, Computer Architecture and Operating System
- Mathematics:** Probability and Stochastic Processes, Transform Calculus, Mathematics I, Mathematics II
- Electrical and Electronics:** Introduction to Electronics\*, Signals and Networks\*, Analog Electronics\*, Measurements and Electronic Instruments\*, Digital Electronics\*, Control Systems and Engg. \*, Instrumentation Devices - I\*, Instrumentation Devices - II\*, Data Communication, Embedded Systems\*  
\* Includes Laboratory along with Theory
- MOOC:** [Competitive Programmer's Core Skills | Saint Petersburg State University](#), [Software Development Processes and Methodologies | University of Minnesota](#), [Computer Vision Basics | University of Buffalo](#), [Game Theoretic Solution Concept with SpreadSheets | Coursera](#), [Number Theory and Cryptography | UC San Diego](#), [Divide and Conquer Sorting and Searching and Randomized Algorithms | Stanford](#), [Graph Search Shortest Paths and Data Structures | Stanford](#), [Machine Learning | Stanford](#).

## SKILLS and EXPERTISE

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**Languages :** C, C++, Python, Apex, SOQL, SOSL, HTML5, CSS, MATLAB, Cuda C, Javascript, Octave, React, JQuery, PHP, Assembly Language (AVR Micro - controller)

**Software :** Proteus, Tina TI, CircuitMaker, LTSpice, XAMPP, AutoCAD, Solderworks

**IDE :** Visual Studio Code, Pycharm, Eclipse, Arduino IDE, ATMELE Studio

**Frame Work:** Bootstrap, Lightning Component

**Others:** Simulink, Git, Software Development Life Cycle, Number Theory, Cryptography, Image Processing, Computer Vision, Parallel Programming, Web Development(Front End), Machine Learning, Competitive Programming, Salesforce, Computer Architecture, Operating System, Approximate Algorithms (NP Complete)

## POSITIONS of RESPONSIBILITY

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**Technology Transfer Group (TTG), IIT KHARAGPUR (core team member)** **2019 - 2020**

- Worked alongside a team of 18 members directly under the **Dean of Sponsored Research and Industrial Consultancy**.
- Conducted several **IPR** (Intellectual Property Rights) Workshops and contacted many companies for sponsorship.
- Engaged progressively towards achieving initiatives like **IndAc** that aims at commercialising the patents of the institute

**Kshitij (KTJ), IIT KHARAGPUR (volunteer)** **2018 - 2019**

- Conducted, invigilated and evaluated several olympiads and had a hands-on experience on **Fest management**.

## EXTRA CURRICULAR ACTIVITIES

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- **Mentor | Student Welfare Group** - Guiding and providing insights about career and academics at IIT to 3 freshers of the Department of Electrical Engineering. **2020 (ongoing)**
- **Member | LBS Hall Chess Team** - Represented LBS Hall in inter-hall general championship. **2018 - 2019**
- **Member | LBS Hall Math Olympiad Team** - Participated in olympiads conducted by the Hall **2018 - 2019**
- **Tutor | Student Welfare Group** - Programming and Data Structures teaching and doubt clearing sessions **2019**
- **Author | Quora** - Have written advisory answers related to JEE (over 0.7 million content views). **2018**
- **Cadet | 3 Bengal Tech Air Squadron NCC** - Actively participated in weekly parades and blood donation camps. **2018 - 2020**  
Also camped in Combined Annual Training Camp 2018