

RAJDEEP SINGH DHINGRA

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EDUCATION

Indian Institute of Technology, Delhi
BTech in Computer Science and Engineering
Disha Delphi Public School, RK Puram Kota
+2 Education, PCM + Computer Science
Disha Delphi Public School, RK Puram Kota
Class 10th Board Examinations

July 2019 - May 2023(Expected Graduation)

Overall CGPA 9.87

April 2017 - April 2019

93.8%

July 2016 - April 2017

CGPA : 10.0

ACHIEVEMENTS

- **JEE Advanced 2019** - Secured **All India Rank 38** amongst 1.3 Million candidates.
- **Kishore Vaigyanik Protsahan Vojana(KVPY)** - Secured **All India Rank 3** in (KVPY) Fellowship 2017 conducted by Department of Science and Technology Govt. of India.
- **Google Code Jam 2021** - Securing **Global Rank 590** in **Round 3**. Secured **Global Rank 957** in **Round 2** and **Global Rank 371** in **Round 1**. Awarded **Google CodeJam T-shirt** for my performance.
- **Google Kickstart 2021** - Secured **Global Rank 68** in **Round D**.
- **Google Hash Code** - Securing **4th place** in India and a **Global Rank 60** in Google Hash Code Online Round 2021 competing with teams from all over the globe. Stood 1st in the IIT Delhi Hub. (Team Name - hashMasterZ)
- **Google Code Jam 2020** - Securing **Global Rank 1250** in **Google Code Jam Round 1 2020**, therefore qualifying for **Round 2**. Secured a rank in **Top 150** amongst all contestants from India in **Round 2**.
- **Facebook HackerCup 2020** - **T-shirt Winner** in Round 2. 733 Rank in Qualification Round. Cleared Qualification, Round 1 of FB Hacker cup. (FB Account - rajdeepphysics@gmail.com)
- **6 stars** on CodeChef with rating of **2216**(username- *rajdeep2001*). **Master** on Codeforces, with rating of **2229**(username - *Rajdeep*).
- **JEE Mains 2019** - Secured **All India Rank 104** amongst 1.3 Million candidates.
- **Aditya Birla Scholar** - awarded to the **Top 16** engineering students in India having **Outstanding Excellence**.
- **INFOSYS Olympiad Award** for winning a **Gold Medal for the Country** at the International Olympiads in 2016.
- **International Junior Science Olympiad(IJSO)** - Won **Gold Medal for India** at the 13th IJSO held in Bali-Indonesia 2016. **Represented India at the International Level**, in a Team of **Top 6** students from India.
- **Asian Physics Olympiad(APhO)** - Won **Silver Medal for India** at the 19th APhO held in Hanoi-Vietnam 2018. **Represented India at the International Level**, in a Team of **Top 5** students from India.
- **Indian Olympiad in Informatics(INOI)** (Twice, 2018 and 2019) - Selected in **Top 30** Candidates in India to Attend the Training Camp for IOI. Awarded the **Outstanding Performance** Certificate in the same.
- **IIT Delhi Semester Merit Award** - Twice received the IIT Delhi Merit award for being in the Top 7%
- **National Mathematics Talent Contest**-Thrice Secured **All India Rank 6, 10, 11** NMTC by AMTI. Twice Cleared the **RMO**.
- **Indian National Physics Olympiad(INPhO)** - **Gold medal** and Certificate of Merit in NSEP-INPhO 2017-18 and 2018-19 for being in **Top 30** Students in India. Selected for the Training Camp of **IPhO**.
- **Indian National Astronomy Olympiad(INAO)** - **Certificate of Merit** in INAO 2016-17 and 2017-18 for being in **Top 30** Students in India. Selected for the Training Camp of **IOAA**.
- Been **4 times** awarded **National Top 1%** in **National Standard Examination in Physics**(twice) and **NSE-Astronomy**(twice).
- **All India Rank 16** among 250,000+ candidates in the Code Gladiators, Organised by TechGig.
- Secured **First Position in Codemania** twice in Codemania 2.0 and 3.0, organised by Algorithms and Coding Club, IIT Delhi.

PROJECTS

- Traffic density estimation** Prof Rijurekha Sen, Computer Science and Engineering, IIT Delhi *Feb 2021 - Ongoing*
- Designed a software to estimate traffic density as a function of time using the Traffic Light Camera Footages.
 - Using OpenCV Library for the Computer Vision part of this project.
- Postfix Exp Eval for MIPS architecture** Prof Preeti R. Panda, Computer Science and Engineering, IIT Delhi *Feb 2021*
- Made a program in MIPS Assembly language to evaluate postfix expressions by the MIPS architecture processor. Also designed a program to compute the Area under curve by MIPS processors.
 - Made use of sp pointer and integer('word') registers to implement it.

ScanUp - Document Scanner App [Click Here](#)

June-July 2020

- Improved Edge Detection Accuracy by 30% from other similar apps using OpenCV, Java, Flutter, Objective-C.
- Improved image Quality by 20% by creating a Shadow Removal Filter using OpenCV Library.

Lexer and Parser of Boolean Programs Prof S. Arun Kumar, Computer Science and Engineering, IIT Delhi

March 2021

- Used ML-Yacc and ML-Lex to create a DFA based Lexer and a LR(1) Parser for Boolean Programs in Standard ML.
- Documented the Boolean language using Extended Backus–Naur form.

Scanner for CSVs Prof S. Arun Kumar, Computer Science and Engineering, IIT Delhi

Feb 2021

- Made a scanner for Character Separated Values in Standard ML.
- It converts CSV with one delimiter to another. Uses $O(1)$ space and Linear time.

Memory Allocation System Prof Rahul Garg, Computer Science and Engineering, IIT Delhi

Nov-Dec 2020

- Designed a System using which Operating Systems allocates and frees memory used by programs.
- Made a Defragmentation Program to make Effective use of memory.
- Used AVL Trees to Improve Response times by 40%.

Digital Image Filter Prof Anshul Kumar, Computer Science and Engineering, IIT Delhi

Dec 2020

- Designed an image filter which produces and smoothed/sharpens images.
- Used a 3×3 sliding window for QVGA Images.
- Designed the Projected on the Vivado Platform and implemented on the BASYS FPGA Board.

Digital Clock Prof Anshul Kumar, Computer Science and Engineering, IIT Delhi

Dec 2020

- Inputs and Outputs provided by the BASYS3 FPGA board.
- Used VHDL for describing design of a digital clock.
- Moore-Mealy concept to make State Diagram for K-map minimization

XMEME - CRUD API to post and get images [Click Here](#)

Feb 2021

- GET and POST requests to get and post images. Post URL and Caption of the image.
- Used NodeJS, Express and MySQL as the Tech Stack. Also deployed a website for interaction Here
- Optimized Database calls for fast GET and POST requests.

Parking Counter Prof Bhim Singh, Electrical Engineering, IIT Delhi

March-August 2020

- Designed a Car Parking Counter using a 4 digit 7 segment display, Timer-555 and Pressure, Laser Sensors.
- Added in modes for one-way and two-way exits and Interface to make it more intuitive.

Design and Made a Electric Scooter Prof P.V.M. Rao, Head of Design Department, IIT Delhi

Nov-Dec 2019

- Improved Power efficiency by 25% and Speed by 20% by designing a more light and streamlined model.
- Made a controller with Aurdino to control Speed vs Power of the motor which improved battery life by 15%.

Internship at "Enthire"

Dec 2019

- Worked on Seamless integration of Documents across various users. Improved Speed by 10%.

TECHNICAL SKILLS

Skills: C++, Java, Python, JavaScript, NodeJS, Objective-C, VHDL, MATLAB, OpenCV, FPGA, Arduino, Autodesk Inventor, Firebase, Android, iOS, Vivado, MIPS Assembly Language

POSITIONS OF RESPONSIBILITY

Algorithms and Coding Club, Coordinator

Making Problems for Contests, Holding Sessions for people interested in Competitive Programming. Spreading the Spirit of Programming throughout the Campus.

Academic Mentor, Calculus (MTL100)

Taught Juniors the Concept and Solved their doubts.

VOLUNTEERING EXPERIENCE

VIDYA Teaching Project

Taught and mentored underprivileged students from various stratas for various examinations like CBSE Board Exam, IIT-JEE etc.

PISA Volunteering, Intellify

Analyzed various past trends and made Questions for KV kids to practice. Aimed to improve India's performance at PISA.

CampK12

Part of coding-based technical education program for children from Delhi-based NGO, Delhi. Teaching Javascript Coding to Grade 9-12 students, developing and monitoring various projects.