

# 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 10<sup>th</sup> 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 2018 conducted by Department of Science and Technology Govt. of India.
- **Google Code Jam** - 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** - **Tshirt 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 13<sup>th</sup> 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 19<sup>th</sup> 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.
- **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

**Memory Allocation System** Prof Rahul Garg, Computer Science and Engineering, IIT Delhi  
- 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%.

*Nov-Dec 2020*

**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.

**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 33 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

- 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%.
- Distance Calculator - iOS Application** [Click Here](#) *June-July 2020*
- Used Pods to get the Distance between one source and up to 4 destinations. Uses API Calls to fetch Live Data.
- Currency Converter - iOS Application** [Click Here](#) *June-July 2020*
- Fetch Live Data from an API to give Latest Currency Rates. Improved Fluidity of the App.

## TECHNICAL SKILLS AND RESEARCH INTERESTS

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**Skills:** C++, Java, Python, Objective-C, VHDL, MATLAB, OpenCV, FPGA, Arduino, Autodesk Inventor, Firebase, Android, iOS, Vivado

**Research Interests:** Algorithms, Computer Networks, Discrete Mathematics, Quantum Computing, Information Theory, Data Structures, Theoretical Computer Science, Cryptography, Logic, Security, Computer Vision, Machine Learning, Artificial Intelligence, Human Computer Interaction.

## POSITIONS OF RESPONSIBILITY

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### **Algorithms and Coding Club, Executive**

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

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### **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.