

Kushagra Gupta

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EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY, DELHI

BACHELOR'S AND MASTER'S OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

November 2021— July 2026 (expected) | India

CGPA : 9.579/10 (6th semester)

Relevant Coursework: Data Structures, Algorithms, Discrete Math, PL, Cryptography, Microeconomics, AI, Calculus, Linear Algebra, Probability, OS, Compiler Design, Parallel & Distributed Programming, Computer Architecture, Network & System Security

EXPERIENCE

INRIA SOPHIA-ANTIPOLIS | SUMMER INTERN WITH PROF. PIERRE ALLIEZ IN THE TITANE RESEARCH TEAM

May 2023 - July 2023

- Worked as a summer intern with **Prof. Pierre Alliez** in the TITANE research team on improving the **Alpha Wrapping with an offset** algorithm in the open-source CGAL Library for effectively generating triangular meshes of real-life objects.

CMMRS, MPI-SWS SAARBRÜCKEN | CORNELL, MAX PLANCK, MARYLAND, PRE-DOCTORAL RESEARCH SCHOOL

- Participated in CMMRS'23 Research School on Emerging CS Research Trends, selected amongst top **90** students worldwide.

VDO.AI & IIM AHMEDABAD | DATA SCIENCE INTERN & RESEARCH ASSISTANT

August 2022 - January 2023

- Worked with Prof. Anuj Kapoor, IIM Ahmedabad and Prof. Omid Rafieian, Cornell on **Vdo long-short ads** project for VDO.AI, analysing video-ad Data using Pandas and Scikit-Learn Python Libraries for Skippable, Non-Skippable and No-Ads Videos.

AR FOR MAXILLOFACIAL SURGERY | COD310 PROJECT WITH PROF. RAHUL NARAIN

- Developed an Augmented Reality application in **Unity** to assist in **maxillofacial surgery** through AR visualization.
- Integrated **U-Net Transformer models** for mesh extraction and precise AMASSS segmentation from noisy CT DICOM data.

ROLLERBALL CHESS BOT | PL/0 INTERPRETER | 1D COLLISION SIMULATOR | COURSE PROJECTS

- Created a Rollerball Chess Bot by implementing **Minimax** tree search, optimizing it by $\alpha - \beta$ Pruning and evaluation functions.
- Designed PL/0 interpreter with static type checking, which generates AST & executes the program using SML, ML-LEX & YACC.
- Simulated high frequency collisions of a large number of particles in 1D optimally by implementing in Python using **min-Heaps**.

ACHIEVEMENTS

2023 Department Rank 1
2023 **Charpak Lab** Scholar
2023 **UPE/ACM** Scholarship Awardee
2023 **Jane Street** SEE Participant
2022 Resource Person, APHO '22
2022 IITD Semester Merit Award
2022 Reliance Foundation Scholar
2021 JEE Advanced **AIR 109**
2021 JEE Main **AIR 72**
2021 **MOOC Qualifier**
2020 **KVPY (SX & SA) AIR 35 & 158**
2020 NSEP, NSEC, NSEA **Top 1 %**
2020 RMO, NSEC, NSEA Qualifier
2019 **NTSE** Scholar
2019 NSEA, RMO Qualifier
2018 Regional Mathematical Olympiad

First rank in the CSE Dual Degree Programme at IIT Delhi
Scholarship awarded by **IFI - Embassy of France** for internship at **INRIA Sophia Antipolis**
Scholarship awarded by **UPE & ACM** for academic excellence to **Top 4** students worldwide
Selected for the **Jane Street SEE : IIT Edition** on trading research and software engineering
Responsible for evaluating **22nd Asian Physics Olympiad** hosted by IAPT, Dehradun, India
Conferred for being in the **Top 7%** students in **1st, 2nd, 3rd, 4th & 5th** semester
AI Fellowship awarded by Reliance Foundation to brightest 60 students across India
Secured **All India Rank 109** amongst 0.2 Million Candidates
Secured **All India Rank 72** amongst 1 Million Candidates
MOOC **Math Olympiad Camp held** in lieu of **IMOTC**, for the **62nd IMO Russia**
Awarded KVPY Fellowship by IISc, Bangalore
National Top 1 % amongst **Top 209, 179 & 82** candidates in IPhO, IChO & IOAA Stage-1
Qualified RMO, NSEC & NSEA (IMO, IChO IOAA Stage-1)
Awarded NTSE scholarship by NCERT, Govt of India
Qualified National Standard Examination in Astronomy (IOAA Stage-1)
Qualified RMO (IMO Stage-2), conducted by HBCSE

EXTRACURRICULARS

1st Position, Techfest'22, IITB
Executive, ACES-ACM, ANCC & PAC
Academic Mentor for MTL100, BSW
2nd Position, Spacewalk & Team-Head
2nd & 4th Position, Pravega '22
Code-Jam, Hacktoberfest & GCI

In Stress Prediction, Techfest'22 | Qualified for IITB Winter School'22 - **ACM & Trust Lab**
ACES-ACM, ANCC, PAC are the ACM Chapter, Coding Club & Physics & Astro Club, IITD
Conducted academic sessions for the course MTL100, Calculus for **1st Year** students
2nd Position in Spacewalk, PAC & Team-Head in **TRYST'22, IITD's annual sci-tech fest**
In Pale Blue Dot & Decoherence, **Pravega '22, IISc Bangalore's** annual fest
Qualifier: Hacktoberfest '20-22, **Google** Code-Jam '22 & Code-In '18 | CodeChef: R-1513

SKILLS

Experienced: • C, C++ • Python - Pandas, Sklearn • VHDL • HTML - CSS • SML • CGAL | **Familiar:** • MATLAB • \LaTeX • Bash • Qt