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, Econometrics, AI, Calculus, Linear Algebra, Probability, OS, Compiler Design, Parallel & Distributed Programming, Computer Architecture, Network & System Security, DBMS

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**	**First** rank in the CSE Dual Degree Programme at IIT Delhi
2023	**Charpak Lab** Scholar	Scholarship awarded by **IFI - Embassy of France** for internship at **INRIA Sophia Antipolis**
2023	**UPE/ACM** Scholarship Awardee	Scholarship awarded by **UPE & ACM** for academic excellence to **Top 4** students worldwide
2023	**Jane Street** SEE Participant	Selected for the **Jane Street SEE : IIT Edition** on trading research and software engineering
2022	Resource Person, APhO '22	Responsible for evaluating 22nd **Asian Physics Olympiad** hosted by IAPT, Dehradun, India
2022	IITD Semester Merit Award	Conferred for being in the **Top 7%** students in $1^{st}, 2^{nd}, 3^{rd}, 4^{th}$ & 5th semester
2022	Reliance Foundation Scholar	AI Fellowship awarded by Reliance Foundation to brightest 60 students across India
2021	JEE Advanced **AIR 109**	Secured **All India Rank 109** amongst 0.2 Million Candidates
2021	JEE Main **AIR 72**	Secured **All India Rank 72** amongst 1 Million Candidates
2021	**MOOC Qualifier**	MOOC **Math Olympiad Camp held** in lieu of **IMOTC**, for the 62nd IMO Russia
2020	**KVPY (SX & SA) AIR 35 & 158**	Awarded KVPY Fellowship by IISc, Bangalore
2020	NSEP, NSEC, NSEA **Top 1** %	**National Top 1** % amongst Top **209, 179 & 82** candidates in IPhO, IChO & IOAA Stage-1
2020	RMO, NSEC, NSEA Qualifier	Qualifed RMO, NSEC & NSEA (IMO, IChO IOAA Stage-1)
2019	**NTSE** Scholar	Awarded NTSE scholarship by NCERT, Govt of India
2019	NSEA, RMO Qualifier	Qualifed National Standard Examination in Astronomy (IOAA Stage-1)
2018	Regional Mathematical Olympiad	Qualified RMO (IMO Stage-2), conducted by HBCSE

EXTRACURRICULARS

1st Position, Techfest'22, IITB	In Stress Prediction, Techfest'22	Qualified for IITB Winter School'22 - **ACM & Trust Lab**
Coordinator, iGEM, ACES-ACM, BlocSoc	Student Member & Coordinator at iGEM, the ACM Chapter and Blockchain Society, IITD
BSW Student Mentorship '23 and '24	Student Mentor for 1st Year CS5 students & Academic mentor - **MTL100, Calculus**
2nd Position, Spacewalk & **Team-Head**	2nd Position in Spacewalk, PAC & Team-Head in **TRYST'22, IITD's annual sci-tech fest**
2nd & 4th Position, **Pravega '22**	In Pale Blue Dot & Decoherence, **Pravega '22, IISc Bangalore's** annual fest
Code-Jam, Hacktoberfest & GCI	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