



# AKSHAT JHA



## ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Computer Science & Engineering	Indian Institute of Technology Delhi	9.73
2022	Central Board of Secondary Education	AK Children Academy, Ghaziabad	97.6%
2020	Central Board of Secondary Education	AK Children Academy, Ghaziabad	96.6%

## INTERNSHIPS

- Citadel Securities, London:** *Cross-Exchange Locked-Crossed Opportunities* Summer 2025
- Conducted research on cross-exchange Locked-Crossed opportunities in developed European and Indian equities markets
  - Developed a HFT Strategy for MTFs and secondary exchanges improving existing systematic alpha performance by > 400%
- Algorithms-Biology-Structure, INRIA Sophia Antipolis:** *Sampling of Multi-Loop Systems* Summer 2024
- Devised methods to find conformations of multi-cyclic proteins based on **Loop Closure** and **Hit and Run** Algorithms
  - Created new packages in the **Standard Bioinformatics Library** for Lie Group Interpolation and Molecular Visualisation
  - Improved Loop Sampling to achieve **better results than the current State of The Art** methods based on MD simulations

## SCHOLASTIC ACHIEVEMENTS

- **Department Rank:** Ranked **Third** in the CS1 program and Fourth in the institute among 2022 entry students
- **IIT Delhi Merit Award:** Awarded in semesters I-V for being in Top 7% of the institute and CSE department
- **CMMRS 2025:** Among the top 100 students across the world accepted into Cornell, Maryland and Max Planck Pre-doctoral Research School in Computer Science held at MPI-SWS, Saarbrücken, Germany
- **HSE Saint Petersburg Students Week:** Invited by HSE University, St. Petersburg, for a **fully funded trip** to attend Computer Science workshops in the Saint Petersburg Campus in June 2024 based on **IIT Delhi's recommendation**
- **Jane Street SEE:** Selected among **top 50 students from all IITs** for a winter program at JS Hong Kong Office. Attended workshops in Machine Learning and Trading. Learnt OCaml and the Core and Async library and built a computer game.
- **Top 50 out of 19,000+** candidates in IOQC. Eligible for **International Chemistry Olympiad Camp** at HBCSE, TIFR, Mumbai. **National Top 1%** in Chemistry. **State Top 1%** in Physics. Qualified **Zonal Informatics Olympiad, IOQA & IOQP**
- **JEE 2022:** AIR 245 out of 1,000,000+ candidates in JEE Main | AIR 264 out of 160,000+ candidates in JEE Advanced
- **Kishore Vaigyanik Protsahan Yojana:** Awarded KVPY SX and SA Fellowship by the Indian Institute of Science, Bengaluru

## PROJECTS

- **D2 ANNS** | *CS Theory Group, IITD (Prof. Amit Kumar and Prof. Ragesh Jaiswal)* Spring 2025 - Present
  - Conducting research on clustering and quantization based Approximate Nearest Neighbour Search (ANNS) methods
  - Supported by **Microsoft Research India's** research grant titled "Developing new techniques for vector search"
- **Tool Augmented LLMs** | *DAIR Lab, IITD (Prof. Mausam and Prof. Parag Singla)* Fall 2025 - Present
  - Developing Tool Augmented LLM tools for solving combinatorial optimization and FOL based problems
  - Researching on current SOTA and developing datasets to test logical reasoning capabilities of agentic tools and standard LLMs
- **NREGA Impact Assessment** | *ACT4D, IITD (Prof. Aaditeshwar Seth)* Summer 2023
  - Improved **Causal ML** models to understand effect of NREGA water bodies on vegetation to identify confounding variables
  - Developed a web application to visualise watershed and Land Use data collected by the GramVaani and ACT4D team
- **Focus App** | *Design Practices (Prof. Huzur Saran)* Spring 2024
  - Designed an **Android app** from scratch with gamification elements. Incorporated social components for user engagement and challenge-based focus improvement along with an AI chatbot. Used **Firestore** Auth and Storage, **Flame** and ChatGPT
- **Linux Kernel Hacking** | *Operating Systems (Prof. Smruti Ranjan Sarangi)* Spring 2025
  - Built a custom user-level threading library, enabling efficient thread management and synchronization with minimal kernel dependence
  - Built Linux kernel extensions with system calls to track process resources, enforce quotas, and terminate processes on violations
- **FPGA Image Processing** | *Digital Logic and System Design (Prof. Preeti Ranjan Panda)* Fall 2023
  - Designed an **image filter processing unit, memory units** and **VGA display** output unit using VHDL for Basys3 FPGA board
- **Stock Screener and Trading Simulator** | *Design Practices (Prof. Huzur Saran)* Spring 2024
  - Developed a **stock screener** using Flask, integrating API calls to fetch **real-time data**. Designed caching methods to improve performance. Implemented a **trading simulator** in C++ testing various strategies to perform risk-assessment
- **Havannah Agent** | *Principles of Artificial Intelligence (Prof. Rohan Paul)* Fall 2025
  - Built an AI agent for the board game Havannah using Monte Carlo Tree Search and novel heuristics. Top 5% in COL333 tournament

## TECHNICAL SKILLS

**Languages** - C++, C, Python, OCaml, JavaScript, Dart, MATLAB, VHDL, CSS, HTML

**Libraries and Packages** - CGAL, Boost, Eigen, Pandas, Flask, Google Earth Engine (GEE), scikit-learn, NumPy, Matplotlib, Django

**Software and Utilities** - LaTeX, GDB, CMake, Git, Lex, Yacc, Autodesk Inventor, LTSpice



# AKSHAT JHA



## IIT COURSE

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B.Tech in Computer Science & Engineering	Indian Institute of Technology Delhi	9.73	3

## COURSES DONE

Calculus, Intro. To Electrical Engg., Linear Algebra & Diffe. Equa., Intro. To Computer Science, Probability & Stochastic Pro., Discrete Mathematical Structur, Data Structures And Algorithms, Digital Logic & System Design, Signals And Systems, Microeconomics, Programming Languages, Computer Architecture, Design Practices, Numerical Algorithms, Macro Economics, Special Module On Intelligent Info. Processing, Analysis & Design Of Algorithms, Computer Networks, Machine Learning, Principles Of Artificial Int., Operating Systems, Principles Of Autonomous Systems, Econometric Methods, Intro. To Parallel & Dis. Pro.

## POSITIONS OF RESPONSIBILITY

- Coordinator: Technology, BRCA (January, 2024 - January, 2025)
- Coordinator, ACES-ACM, CAIC (January, 2024 - January, 2025)
- Quizzing Representative, Quizzing, BHM (June, 2023 - May, 2024)
- Vibhinn 2023 Executive, Indradhanu, OTH (June, 2022 - May, 2023)
- Hostel Representative, Quizzing, BRCA (June, 2023 - May, 2024)
- Executive, ACES-ACM, CAIC (June, 2023 - May, 2024)

## EXTRA CURRICULAR ACTIVITIES

- 2nd Runner-Up, Inter IIT Cultural Meet 7.0 Overall trophy
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- Inter IIT Tech Contingent Member '24, Inter IIT Techmeet 13
- Finalist, Nihilanth SBT Quiz
- Finalist, Inter IIT SBT Quiz
- Management, Stic Dinner (January, 2000 - January, 2000)
- Dojima Winner, Dojima Hackathon (January, 2000 - January, 2000)
- 3rd Position, App a thon (January, 2000 - January, 2000)
- Quizmaster, Castle Conundrum - A General Quiz
- Bronze Medal, Medallists in Quizzing League 2023-24
- Second Runner Up, Team Rankings in Quizzing League 2023-24
- Winner, BRCA Trophy (January, 2000 - January, 2000)
- Panel Member, Intern Ke Fundae
- Interviewer, TechBytes
- Creator, Department Resource Repository
- Organiser, IITD CSE Research Symposium
- Organiser, Delhi FOSS
- Winner, India League Quiz
- Inter IIT Contingent Member, Inter-IIT Contingent Member
- Bronze, Quizzing League Individual Standings
- Winner, Quizzing League Team Standings
- Winner, BRCA General Championship