Aditya Gupta

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PROFILE SUMMARY

Passionate and detail-oriented aspiring Software Engineer with a good foundation in C++ and Java. Skilled in problem solving, data structures, and algorithms, with hands-on experience building efficient and scalable solutions. Interested in debugging, writing clean, maintainable code and grasping the logic behind complex systems. Quick learner with a proactive mindset, eager to contribute to real-world projects and collaborate in fast-paced development environments.

EDUCATION

Indian Institute of Technology — Guwahati, Assam
Bachelor's in Data Science & Artificial Intelligence — *Sep 2023 – Present*
- Cumulative GPA: **8.0/10.0**

Jawahar Navodaya Vidyalaya — Azamgarh, Uttar Pradesh
Secondary and Higher Secondary Schooling — *Sep 2015 – March 2022*
- Cumulative GPA: **9.5/10.0**
- Relevant Skills: Teamwork and Leadership

TECHNICAL SKILLS

- **Programming Languages**: Core Java, C/C++, Python, Javascript
- **Web Development Technologies**: HTML, CSS, Operating System, Computer Networking
- **Problem Solving**: Data Structures and Algorithms, Competitive Programming

LEADERSHIP & INTERPERSONAL SKILLS

- **Teamwork and cultural adaptability**: Over 7 years in a fully residential JNV hostel, fostering collaboration, empathy, and cross-cultural understanding
- **Initiative-driven leadership**: Co-led the college Tech Club, conducted 7+ sessions, mentored 10–15 juniors in competitive programming, and actively promoted peer learning and tech awareness initiatives

PROJECTS

Bloom Filter Implementation | *Python, Operating System*
- A full-fledged implementation of Bloom Filter, focusing on efficient membership testing, parameter optimization, false positive rate analysis and comparing theoretical and experimental behavior of Bloom Filters.

Indexed Priority Queue (IPQ) | *C++, Implementation of Data Structure*
- Developed an efficient Indexed Priority Queue supporting key-based insert, delete, and update in $O(\log n)$ time.
- Enabled direct access and modification, outperforming standard priority queues, enhancing performance for algorithms like Dijkstra

Performance Analysis of Lazy and Eager Dijkstra | *C++, Implementation of Data Structure*
- Implemented Lazy and Eager Dijkstra algorithms.
- Conducted a performance analysis of Lazy vs. IPQ-based Dijkstra implementations across 300 graph cases. Achieved up to 3× speedup with IPQ, outperforming traditional heaps in 82% of sparse and 77% of dense graphs.

SCHOLASTIC ACHIEVEMENTS

- **Hackathon Winner - Physics Wallah Institute of Innovation, Jan 2025**
  Secured 1st position among 50 teams by developing a D2C brand business model, building a functional website, and designing a Figma prototype as part of a team-based product building challenge

- **Strong competitive programming background**
  Solved 750+ problems across various online coding platforms and actively participated in live contests competing with global programmers. Secured a personal best rank of 1753 among 23,000+ participants on Codeforces.
  Codeforces [chill-guy] : Pupil (max rating 1309) **CodeChef [chillguy123] : 3*** (max rating 1642)