




Abhinav Gupta

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Maharaja Agrasen Institute of Technology, Delhi	8.99 (Current)	2023–2027
Senior Secondary	CBSE Board	81.0%	2023
Secondary	CBSE Board	96.4%	2021

PROJECTS

- Vulture – Cross-Regulatory Drug Safety Intelligence Extension** Apr 2026 – May 2026
Tech Stack: FastAPI, PostgreSQL, JavaScript, Chrome/Edge Extension (MV3), OpenFDA, Render 
 - Developed a **browser extension** that analyzes medicines in real time on **PharmEasy, 1mg, and Netmeds** by aggregating regulatory approvals, recalls, safety warnings, adverse event reports, and banned formulations from global health agencies.
 - Built a **FastAPI** and **PostgreSQL** based intelligence engine that integrates data from FDA, EMA, Swissmedic, CDSCO, and OpenFDA, using **ingredient normalization**, synonym mapping, and **trigram based fuzzy matching** to identify medicines across heterogeneous regulatory databases.
 - Processed **20,000+ drugs, 82,000+ FDA labels, 34,000+ approval records, and 18,000+ enforcement actions** across 16 database tables, while implementing a **weighted regulatory consensus engine** to detect cross-jurisdictional approval conflicts and generate risk scores in real time.
- Multi-Camera Player Tracking & Re-ID Analytics System** Jun 2025 – Jul 2025
Tech Stack: Python, YOLOv8, ByteTrack, OSNet, PyTorch, OpenCV, Homography 
 - Developed a computer vision system that tracks and identifies football players across different camera angles (Broadcast and Tactical) to maintain a single consistent identity for every athlete on the pitch.
 - Used **YOLOv8** for real-time detection, **ByteTrack** for movement consistency, and **OSNet (Deep Re-ID)** for visual feature extraction, all integrated within a **PyTorch** and **OpenCV** pipeline.
 - Achieved an **82% cross-camera mapping accuracy** (averaging 9/11 players correctly matched) and utilized **4-point Homography** to project raw pixel data onto a 2D tactical pitch for live heatmap generation.
- AI-Based Smart Maintenance Prediction System** Jan 2026 – Feb 2026
Tech Stack: Python, LSTM, Scikit-learn, Arduino (Embedded C), PySerial, FastAPI, Matplotlib 
 - Engineered a real-time predictive maintenance pipeline that streams multi-sensor hardware telemetry to a sequential **LSTM** model for equipment degradation forecasting.
 - Developed the embedded data-acquisition firmware in **Arduino (Embedded C)** and coupled it with a high-throughput **PySerial** ingestion layer to feed the deep learning inference loop.
 - Implemented a multithreaded background listener with a custom structural packet framing protocol (`$temp,dist,ts#`) that completely eliminated data corruption, achieving **0% packet loss** and a live update latency of **<15ms**.

COMPETITIVE PROGRAMMING

- Codeforces**, itzabhinavgupta, Max Rating: **1099** 
 - Secured **Global Rank 5049** among **19,716** participants in Codeforces Round 1077.
- Codechef**, hawk_10, Max Rating: **1415 (2 star)** 
 - Secured **Global Rank 636** among **35,198** participants in Starters 226.
- Geeks for Geeks | Leetcode | CSES**
 - Solved **400+** Data Structures and Algorithms problems on Geeks for Geeks.
 - Solved **200+** problems on Leetcode, focusing on medium and hard-level algorithmic challenges.

TECHNICAL SKILLS

- Programming:** C/C++, Python, Javascript, Java
- AI/ML:** PyTorch, TensorFlow, Scikit-learn, LLMs, RAG
- Web/Mobile:** HTML, CSS, ReactJs, NodeJs, React-Native
- Database:** PostgreSQL, MySQL, MongoDB, Firebase
- Operating Systems:** Windows, MacOS, Linux
- Dev Tools:** Git, MLFlow, Figma, VITE, Docker, Expo

POSITION OF RESPONSIBILITY

- Coordinator, TechCom MAIT (Official CSE Department Society)** Sep 2024 – Present
- Spearheaded** technical logistics for **HackwithMAIT 6.0**, a **72-hour national hackathon**, overseeing technical evaluation for over **2000+ registrants**.
 - Served as **Event Head** for **SIH 2024** internal round, managing a team of **20+ volunteers** to coordinate judging for **700+ student participants**.

ACHIEVEMENTS & CERTIFICATIONS

- Achievements:** **Top 15 Finalist** at **IMC GSMA Hackathon (2400+ participants)**; **Top 25 Student** in **ML & AI (IIT Guwahati)**; 160 Days of DSA (Geeks for Geeks), **Gate 2026 Qualified**.
- Certifications:** C++ (Coding Blocks); Cybersecurity (Cisco); Big Data (IBM); Data Analysis (IBM); AI (Samsung Innovation Campus 2025-26); AICTE).