

NAKUL KUMAR

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EDUCATION

Delhi Technological University, Delhi (formerly DCE)
B.Tech - Computer Science and Engineering - CGPA - 8.127

2023 – 2027

Rohini, Delhi

Ahlcon International School, Delhi
Matriculation from CBSE Board with 82.4%
Intermediate from CBSE Board with 94.2%

PROJECTS

OpenCV Virtual Drawing Board 🔗 | Python, OpenCV, Computer Vision

- Built an interactive virtual drawing tool that tracks a colored marker tip in real-time using a webcam.
- Implemented HSV color space conversion and masking to detect marker cap colors dynamically.
- Used contour detection to identify the marker tip and draw continuously on live video frames.
- Stored marker positions frame-by-frame to simulate persistent on-screen drawing.
- Designed a two-step system: calibrate color and then draw with tracked movements.
- Delivered a lightweight, efficient application for gesture-based visual interaction.

Plagiarism Detection System 🔗 | Python, Flask, NLP

- Developed a web-based plagiarism checker using Flask and cosine similarity without external ML libraries.
- Enabled users to input or paste text via a simple web form for similarity analysis.
- Compared input text to a reference file using Python's standard library for vectorization and scoring.
- Displayed similarity results with a dynamic progress bar and styled output card using minimal CSS.
- Ensured responsiveness and clean UI using lightweight front-end styling and Jinja2 templates.
- Delivered a fast and efficient backend with zero third-party NLP dependencies.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, HTML, CSS

Technologies/Fields: Computer Vision, Natural Language Processing, Web Development

Frameworks/Libraries: OpenCV, Flask

Developer Tools: Git, GitHub, VS Code

Core Subjects: Data Structures & Algorithms, Operating Systems, OOPS, DBMS, Computer Networks

CERTIFICATIONS

- Mastering Python, Flask Framework, HTML Essentials - Udemy
- Mastering C++ - Udemy
- Training program on Robotics Automation and Software Simulation with AI - My Equation

EXTRACURRICULAR ACTIVITIES

- **Community Teaching:** Conducted offline C++ and Data Structures tutorials
- **Environmental Volunteer:** NSSS Foundation - Tree plantation drive on World Nature Conservation Day
- **Hobbies:** Playing Basketball, digital sketching enthusiast, and tech innovation advocate