

# Kushagr Sharma

+91 9116682263 | [sharma.kushagr05@gmail.com](mailto:sharma.kushagr05@gmail.com) | [LinkedIN](#) | [GitHub](#)

## EDUCATION

### Thapar Institute of Engineering & Technology, Patiala

Bachelor of Engineering in Computer Engineering

CGPA : 8.44/10

Sept. 2022 – Jul 2026

### Army Public School, Kanpur

CBSE 12th Board

Percentage : 91.6%

Jul. 2020 – Jul. 2022

### Alwar Public School, Alwar

CBSE 10th Board

Percentage : 93%

Jul. 2017 – Jun. 2020

## PROJECTS

### 3D Solar System Simulation | C++, OpenGL, GLUT

Apr. 2025

- Developed interactive real-time 3D solar system featuring 8 planets, asteroid belt, and starfield background
- Implemented advanced graphics techniques including texture mapping, Phong lighting, and alpha blending
- Built intuitive camera system with mouse controls, zoom functionality, and orbital navigation
- Optimized performance to maintain 60 FPS while rendering 2000+ dynamic asteroids simultaneously

### Sign Language to Text and Speech | Python, OpenCV, Flask

Nov. 2024

- Real-time sign language recognition system using computer vision and machine learning technologies achieving
- Dual-output functionality generating both speech synthesis and text conversion achieving < 300ms processing time
- Achieved 97% accuracy using Random Forest Classifier trained on 500+ labeled images, outperforming baseline models by 25%
- Implemented scalable Flask backend handling 200+ requests/minute with optimized OpenCV pipeline reducing latency by 40%

### Song Mashup Generator | Python, Automation, Flask

Oct. 2024

- Built automated music mashup platform processing 50+ YouTube videos with seamless audio merging
- Implemented end-to-end pipeline: video download, MP3 conversion, audio synchronization, and email delivery
- Developed Flask web application handling 100+ concurrent requests with RESTful API architecture
- Created intelligent audio processing system using MoviePy reducing file processing time by 75%
- Automated email delivery system with RAR compression achieving 60% file size reduction

### Image Cartoonification Tool | Python, OpenCV

Oct. 2023

- Built real-time video cartoonification system with live camera processing at 30+ FPS
- Implemented multi-stage processing pipeline: bilateral filtering, edge detection, and adaptive thresholding
- Applied pyramid sampling for efficient noise reduction while preserving important image features
- Combined color smoothing with edge masking to achieve realistic cartoon aesthetic effects

## TECHNICAL SKILLS

**Languages:** Python, C/C++, MySQL, JavaScript, Go, HTML/CSS

**Frameworks:** Flask, Bootstrap

**Tools/Utilities:** Git, Vim, VS Code, Latex, OpenGL, Wireshark, GNS3, Cisco Packet Tracer

**Operating systems:** Windows, Ubuntu, Kali Linux

## CERTIFICATIONS

Google Cybersecurity Professional Certificate | Coursera

Sept. 2024

## INTERESTS

Cybersecurity | Networking | Steganography | Cryptography | Competitive programming | CTFs | Problem Solving | Machine Learning | Chess | Cricket