Shubham Sharma

Python Developer · ML & Backend · Automation & Computer Vision

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TECHNICAL SKILLS

Python: Core language, OOP, scripting, automation, file I/O, REST APIs
ML & Data Science: scikit-learn, NumPy, Pandas, Matplotlib — model building, preprocessing, evaluation
Backend & APIs: FastAPI — ML model endpoints, JSON APIs, input validation, request handling
Computer Vision: OpenCV — real-time video processing, Haar Cascade detection, image preprocessing
Other Languages: C, C++, Embedded C, JavaScript, HTML, CSS
Database & Tools: MySQL, Git, VS Code, Linux (Ubuntu / Arch), Windows
CS Fundamentals: DSA in C++ (Striver A2Z Sheet), OOP, Operating Systems

PROJECTS

Binary Digit Image Classifier — Perceptron | **Python · scikit-learn · NumPy · Matplotlib** *2026*

- Built a perceptron-based binary classifier that accepts an image as input and predicts whether it shows digit 0 or 1
- Preprocessed images by flattening pixel arrays into 1D feature vectors and normalising values; achieved ~97% test accuracy
- Evaluated with accuracy_score and plotted confusion matrix and training convergence via matplotlib

Tech: Python, scikit-learn (Perceptron), NumPy, Matplotlib, OpenCV

Delivery Time Predictor | **Python · scikit-learn · FastAPI · Pandas** *2026*

- End-to-end regression pipeline: data ingestion, feature encoding, LinearRegression training, evaluation using RMSE and R^2
- Serialised model with joblib, built a FastAPI REST endpoint for real-time predictions, connected to a custom frontend UI

Tech: Python, scikit-learn, Pandas, NumPy, FastAPI, joblib, Matplotlib

Loan Approval Predictor | **Python · scikit-learn · FastAPI · Pandas** *2026*

- Logistic Regression classifier with class imbalance handling, label encoding, feature scaling and full metrics evaluation (F1, ROC)
- Exposed model via FastAPI backend with input validation; served predictions through a frontend interface

Tech: Python, scikit-learn, Pandas, NumPy, FastAPI, Matplotlib

Real-Time Face, Smile & Eye Detection | **Python · OpenCV** *2026*

- Three real-time CV pipelines in Python using OpenCV Haar Cascade classifiers with tuned scaleFactor and minNeighbors
- Efficient frame processing loop with live bounding-box rendering and FPS-aware webcam capture handling

Tech: Python, OpenCV, Haar Cascade XML classifiers

Shungaku.tech — EdTech Platform | **Hackathon · Gemini API · ElevenLabs API** *2026*

- Full-featured EdTech web app for college students — shipped under hackathon constraints; Python backend handled all API integrations
- Integrated Google Gemini API for AI learning features and ElevenLabs API for TTS audio via Python backend calls
- Won two track prizes: Best Use of Gemini API (Google DeepMind) and Best Use of ElevenLabs API

Tech: Python, Gemini API, ElevenLabs API, FastAPI, JavaScript

WiFi-Controlled Smart Car — Python Control Server | **Python · IoT · Embedded C** *2026*

- Wrote a Python WiFi server that receives joystick commands from a mobile UI and relays motor control instructions to the car in real time
- Python server handled socket communication, command parsing, and connection management

Tech: Python (socket server), Embedded C, WiFi, HTML/JS frontend

Path Mimicking Car — Reverse Replay System | **Python · IoT · Embedded C** *2026*

- Python script records WiFi movement instructions using a stack structure and replays them in reverse — car retraces its path automatically

Tech: Python, WiFi, Embedded C

Client Website Development — Freelance | **Python · Web** *2026*

- Acquired clients with a batchmate; delivered complete website solutions with Python scripting for backend automation tasks

ACHIEVEMENTS & RECOGNITION

- 🏆 Google DeepMind Track Prize — Best Use of Gemini API *Hackathon 2026*
- 🏆 ElevenLabs Track Prize — Best Use of ElevenLabs API *Hackathon 2026*
- Built and independently shipped 7+ Python projects across ML, computer vision, backend APIs, and IoT
- Consistently solving Striver A2Z DSA Sheet in C++ — strengthening algorithmic problem-solving foundations

EDUCATION

B.Tech — Mechanical Engineering | **NIT Hamirpur (National Institute of Technology)** *2025 – 2029*

- Self-driven specialisation in Python development, ML, and backend systems alongside core engineering curriculum
- Active participation in hackathons, open-source projects, and competitive programming