JATIN BAGGA

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EDUCATION

THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY(TIET)   **Patiala, Punjab**
Bachelor of Engineering in Computer Engineering   Expected Jul 2026
Cumulative CGPA: 8.51 / 10

WORK EXPERIENCE

Summer Intern - ELC   **TIET, PATIALA**
Data Science Intern   Jun 2025 – Jul 2025
- Built an ML-powered spoilage detection system using Raspberry Pi and image/sensor data to automate food quality monitoring
- Deployed a TorchScript-optimized ResNet18 model for freshness prediction, eliminating manual checks in test environments
- Developed a Flask API with crontab-based startup and integrated sensor-camera input via GPIO for edge inference

PROJECTS

Sign Language Recognition Glove *(In Progress)* | GITHUB   **Jan 2025 – Present**
- Designed a wearable glove using ESP32 and 5 flex sensors to classify 10+ hand gestures via a custom ML model
- Enhanced communication for speech-impaired users; currently optimizing model accuracy and latency

Smart Food Spoilage Detection System *(ELC Internship)* | GITHUB   **Jun 2025 – Jul 2025**
- Led a 6-member team to build a Raspberry Pi-based system with MQ sensors and ResNet18 model for spoilage detection
- Achieved 95% detection accuracy; project shortlisted for internal deployment and presented to 5+ senior mentors

CURA – Medical Chatbot | GITHUB | link   **July 2025 – Sept 2025**
- A medical chatbot using a RAG pipeline with Flask, LangChain, HuggingFace embeddings, Pinecone, and Google Gemini.
- Designed retrieval–generation chains with custom prompts, boosting precision and cutting Hallucinations by ~30%.

InSightAI – Interview Feedback Platform | GITHUB | link   **Nov 2024 – Dec 2024**
- Developed a web app integrating Whisper ASR, DistilBERT sentiment, and facial analysis to evaluate candidate responses.
- Added real-time feedback dashboard and PDF reporting, enabling automated soft-skill assessment for mock interviews.

TECHNICAL SKILLS

- **Programming & Data: Python, C++, SQL**
- **Web Development: HTML, CSS, Flask**
- **Machine Learning & AI: Scikit-learn, PyTorch, TensorFlow, LangChain, HuggingFace, Pinecone VectorDB**
- **Computer Vision & NLP: OpenCV, MediaPipe, Speech Recognition, NLTK**
- **Developer Tools: Git/GitHub, VS Code, Jupyter Notebook, RStudio, Gunicorn**
- **Cloud & APIs: Google Cloud Platform, REST APIs**
- **Embedded & IoT: ESP32, Raspberry Pi, Arduino**

Core Subjects: OOPs, Data Structures & Algorithms, Operating Systems, Data Science, Computer Networks, Machine Learning & Deep Learning, Software Engineering, Database Management System, Natural Language Processing, Computer Vision, Internet of Things

LANGUAGES: Fluent in English, Hindi, Punjabi

CERTIFICATES

- Basic Image Classification with TensorFlow – Coursera
- Deep Learning with PyTorch: GradCAM – Coursera

ACHIEVEMENTS

- Solved 200+ DSA problems on LeetCode, GFG to strengthen coding and algorithmic skills
- Progressed from individual Python automation scripts to leading a 6-member ML project during internship, showcasing increasing technical responsibility