

# Prabhjot Singh Assi

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## Education

### Acropolis Institute of Technology and Research

Indore, India

Bachelor of Technology in CSE (AI & ML); CGPA: 7.22

Oct. 2022 – July 2026

Coursework: Data Structures, Algorithms, OOP, DBMS, OS, Web Development, Machine Learning, Deep Learning

## Experience

### IEEE Tech4Good (Funded)

July 2024 – March 2025

Indore, India

Tech Lead & Grant Recipient

- Secured \$4,000 USD funding to lead a high-impact humanitarian technology initiative using AI & IoT.
- Managed a cross-functional team of 5 to design, build, and deploy the *Krishi* soil analysis ecosystem.
- Built and deployed an AI-IoT agricultural platform increasing crop yields by 20% for 10+ pilots via precision soil analytics.
- Integrated a **RAG**-based advisory chatbot using **Gemini API** to deliver context-aware farming insights significantly outperforming static rule-based systems.
- Designed robust IoT sensor nodes for field data collection, synced via cloud infrastructure.

## Projects

### Signify | Flutter, Python, MediaPipe, Random Forest

- Engineered real-time bi-directional ISL translation system (**National Winner, SIH 2024**), achieving 90% recognition accuracy.
- Implemented optimized MediaPipe pipelines and random forest classifiers within a scalable mobile architecture.
- Reduced latency to under 100ms for real-time translation, directly aiding hard-of-hearing communication.

### TabFlow | TypeScript, JavaScript, HTML5, CSS3, Vite

- Developed a high-performance Chrome extension for advanced tab management, reducing navigation latency to under **100ms**.
- Implemented clean, reusable code using **Shadow DOM** for style isolation and **LRU Cache** for optimized local screenshot storage.
- Engineered a keyboard-driven visual switcher handling 50+ tabs, ensuring 60fps smooth scrolling performance.

### Sentient | React.js, Python (FastAPI), Tailwind CSS, FAISS

- Architected a full-stack AI platform enabling dynamic NPC interactions via **RAG**, integrating a **React** frontend with a high-performance **FastAPI** backend.
- Optimized knowledge retrieval using **FAISS** vector database, reducing query response times for context-aware dialogue.
- Designed responsive UI components using **Tailwind CSS** and implemented secure, scalable RESTful API protocols.

### Med.AI | Python, PyTorch, Scikit-Learn

- Led a team of 4 to develop a medical diagnostic assistant utilizing **DenseNet** and **Transfer Learning** to analyze clinical data.
- Engineered a robust classification pipeline achieving **85% accuracy** on sparse datasets, significantly reducing false negatives in preliminary screenings.

## Honors & Awards

### National Hackathon Winner – Smart India Hackathon (SIH) 2024

Dec 2024

Problem Statement 1716 (ISL Translation) | Awarded by Govt. of India

### \$4,000 Grant Recipient – IEEE Tech4Good

July 2024

Global Grant Recipient for Project Krishi due to high social impact

**Hackathon Wins (5):** Intellify 3.0 Hackathon (Winner), HackWave Hackathon (Winner), Code for Bharat 2 Hackathon (1st Runner-up), Codespire Hackathon (1st Runner-up), Prayatna Hackathon (3rd Runner-up)

## Technical Skills

- Languages:** Python, SQL
- Python Libraries:** PyTorch, Scikit-Learn, OpenCV, Flask, FastAPI, NumPy, Pandas, Matplotlib
- GenAI & LLMs:** LangChain, RAG, Vector Databases (FAISS/Pinecone)
- Web Technologies:** HTML, CSS, JavaScript, Tailwind CSS, REST APIs
- Tools:** Git, GitHub, VS Code, Postman, Linux Basics