Niwesh Sah

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EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2027	B.Tech in Computer Science and Engineering	Indian Institute of Technology, Mandi	8.92 / 10
2022	Senior Secondary (CBSE)	Delhi Public School, Eldeco	91%

Relevant Coursework: Data Structures and Algorithms, Probability and Statistics, Database Systems, Machine Learning, Design of Algorithms, Computer Organization, Deep Learning, Automata Theory

SKILLS

- **Languages:** Python, C++ (Proficient) — SQL, JavaScript, TypeScript, Dart (Intermediate) — Solidity (Familiar)
- **Libraries/Frameworks:** PyTorch, TensorFlow, ReactJS, Google ADK, ROS, MongoDB, Git, Node.js, Flutter

PROJECTS

TumourGen, CS671 Project: Feb 2025 - Apr 2025

Tech Stack: Python, PyTorch — GitHub

- Built a DL tumor segmentation pipeline capable of handling previously unseen cancer types with high generalization.
- Achieved an **8.5% accuracy gain** on WT tumor cases from Sub-Saharan and Pediatric datasets over existing baselines.
- Fine-tuned MedSAM with LoRA adapters to reduce training time and GPU memory usage by **54%**.

Moon Mapping for ISRO Inter-IIT: Dec 2024

Tech Stack: Python, Cartopy, QGIS — Journal — GitHub

- Processed **Chandrayaan-2** X-ray spectrometer data to accurately generate elemental ratio maps of the lunar surface.
- Enhanced image resolution using sub-pixel interpolation (**3× improvement**), increasing feature visibility and analysis quality.
- Performed background subtraction and **Gaussian fitting** on X-ray spectra to isolate elemental peaks with improved accuracy.

Ticket Chain — Blockchain-Based Ticketing Platform: Feb 2025

Tech Stack: React, Aptos Blockchain, Node.js, Express.js — GitHub

- Developed a decentralized ticketing system ensuring traceable ownership and fraud prevention using Aptos blockchain.
- Designed and deployed smart contracts to verify ticket authenticity, handle transfers, and prevent resale abuse.
- Enabled resale with automated royalty to original owner, promoting ethical reselling and eliminating black marketing.

Evalia - AI Interview Performance Evaluator — Personal Project: Aug 2024 – Present

Tech Stack: Python, FastAPI, WebSocket, Google ADK, NLP, Docker — GitHub

- Developed AI interview platform with real-time **speech-to-text** and **WebSocket**-based voice interaction.
- Implemented **NLP-based** evaluation engine with dynamic difficulty adjustment and multi-parameter scoring for 50+ jobs.
- Integrated **Google ADK** with sentiment analysis algorithms for comprehensive behavioral and technical assessment.

WORK EXPERIENCE

Volunteering: Aug 2024 – May 2025

Guidance and Counselling Services Volunteer
Supervisor: Dr. Geeta Rani

- Provided continuous mentorship to **21 freshmen**, addressing academic and personal challenges through peer counselling.
- Maintained regular communication with faculty to escalate concerns like homesickness, mental health, and substance issues.

Teaching Assistant: Jan 2025 – May 2025

Course: IC272 (Data Structures and Algorithms)

- Evaluated coursework and guided **200+ students** in Data Structures, addressing queries and clarifying algorithmic concepts.

AWARDS AND ACHIEVEMENTS

- **1st Place**, KrackHack 2025 — Built a blockchain-based ticketing platform; won among **50+** teams at IIT Mandi.
- **2nd Place (PS)**, HCL Tech AI Hackathon — Created a model and app to segment eye veins and map them to disease risk.
- **4th Place**, NASA Space Apps Hackathon — Built a tool to analyze NDVI/NDWI indices for remote farmland monitoring.
- **5th Place (PS)**, Inter-IIT Tech Meet 2024 — Contributed to ISRO's Moon Mapping task; ranked **5th** out of 23 IITs.

POSITIONS OF RESPONSIBILITY

- **Core Team Member, STAC, IIT Mandi:** Organized and executed two space-themed competitions to promote interest in astronomy and space tech.
- **Software Lead, Team Deimos:** Leading the junior cohort in developing the Mars Rover prototype.
- **Core Member, E-Cell:** Delivered a session on product management during the Technical Induction Program for freshmen.