



# LOVNISH VERMA

Software Developer | AI/ML Engineer & Researcher  
Chandigarh, India | princelv84@gmail.com | +91-8894869371  
[LinkedIn](#) | [GitHub](#) | [lovnishverma.in](#) | [HuggingFace](#) | [Kaggle](#) | [Medium](#)



Scan To Download Resume PDF

## PROFESSIONAL SUMMARY

Results-driven AI/ML Engineer and researcher with hands-on expertise in machine learning model development, NLP, and scalable data pipelines. Proficient in Python, modern web frameworks (Flask, Django), and transformer-based LLMs (BERT, GPT, LLaMA) with working knowledge of RAG pipelines and LangChain. Proven track record contributing to national-level e-Governance AI projects at NIELIT. Published author in peer-reviewed journals on Machine Learning, Blockchain, and IoT. Passionate about leveraging Generative AI and frugal engineering to build accessible, high-impact tech solutions.

## PROFESSIONAL EXPERIENCE

### Project Engineer | National Institute of Electronics and Information Technology (NIELIT), Ropar Dec 2024 – Present

- **Architected AI Solutions:** Designed and implemented AI-powered systems to advance e-Governance initiatives and support institutional research goals.
- **Engineered ML Integrations:** Built and deployed robust REST APIs to seamlessly integrate machine learning models, ensuring scalable and efficient workflows.
- **Drove Applied Research:** Collaborated with senior scientists and field experts to align theoretical AI concepts with practical, real-world applications.
- **Mentored and trained students** in Artificial Intelligence, Machine Learning, and Data Science as part of the IndiaAI Scheme and the collaborative NIELIT-IIT Ropar AIML program.
- **Led National Tech Training:** Spearheaded capacity-building programs under the MeitY FutureSkills Prime scheme, training 800+ university students and 400+ government officials in AI/ML, Data Science, and Big Data.

### Software Developer | Smiling Walls, Chandigarh Nov 2023 – Aug 2024

- **Developed Data Pipelines:** Engineered automated Python-based data pipelines using Pandas and Matplotlib for comprehensive analytics and reporting.
- **Optimized Operations:** Automated manual data workflows, boosting overall processing efficiency by 40%.
- **Deployed Edge AI:** Designed and tested edge AI solutions utilizing NVIDIA Jetson Nano and Orin for real-time data processing.

### AIML Trainee | National Institute of Electronics and Information Technology (NIELIT), Ropar, Punjab Apr 2023 – Oct 2023

- **Model Development:** Contributed to the design and training of NLP, computer vision, and predictive analytics models.
- **Application Integration:** Successfully integrated ML models into interactive user interfaces using Tkinter, PyQt, Flask, Django, Streamlit, and Gradio.
- **Digital India Initiatives:** Supported AI capacity-building and technical workshops aligned with Digital India national technology goals.

## EDUCATION

**B.Tech, Computer Science & Engineering** — Green Hills Engineering College (HPTU) 2020 – May 2023

**Diploma in Computer Engineering** — Govt Polytechnic College Sundernagar (HPTECH BOARD) 2017 – Jun 2020

## TECHNICAL SKILLS

**Languages:** Python, Java, C++, SQL, JavaScript

**ML/AI Frameworks:** Scikit-learn, TensorFlow, Keras, Pandas, NumPy, Matplotlib, Seaborn, NLP, Computer Vision

**Generative AI & LLMs:** HuggingFace, Transformers (BERT, GPT, LLaMA), LangChain, RAG Pipelines

**Web Frameworks:** Flask, Django, Streamlit, Gradio

**Databases:** MySQL, MongoDB, Vector DBs (exposure)

**Tools & Cloud:** Git, Jupyter Notebook, Google Colab, Docker, AWS, Google Search Console

**Concepts:** AI Model Deployment, REST APIs, Data Pipelines, Blockchain, Edge Computing (IoT)

## CERTIFICATIONS & AWARDS

---

- Evaluator – National Screening Round — Smart India Hackathon 2025 (Govt. of India & AICTE) | Dec 2025 [\[Verify Credential\]](#)
- 2nd Runner Up (out of 1,552 projects) — Paranox 2.0 National Hackathon, TechXNinjas | Nov 2025 [\[Verify Credential\]](#)
- Certificate of Competency: AI on Jetson Nano — NVIDIA | Nov 2025 [\[Verify Credential\]](#)
- Critical Thinking in the AI Era — HP LIFE & HP Foundation | Feb 2026 [\[Verify Credential\]](#)
- Python Developer Certification (~300 Hours) — freeCodeCamp | Feb 2026 [\[Verify Credential\]](#)
- CITI Program Certification: Human Research — MIT Affiliates | Feb 2026 [\[Verify Credential\]](#)
- Python Essentials 1 — Cisco Networking Academy & OpenEDG Python Institute | Jan 2026 [\[Verify Credential\]](#)
- CyberShikshaa Fundamentals — Microsoft & DSCI [\[Verify Credential\]](#)
- The Complete 2022 Web Development Bootcamp — Udemy [\[Verify Credential\]](#)

## RESEARCH PUBLICATIONS <https://www.researchgate.net/profile/Lovnish-Verma> |

---

**Explainable AI for Web and Text Mining** *International Journal of Digital Technologies (IJDT)* | Jan 2026 | Lead Author

**Pioneering Advances in AI, Machine Learning, and Big Data Analytics** *Book Chapter (Springer)* | 2026 | Lead Author

**IoT-Based Remote Control and Monitoring of Electrical Appliances** *International Journal of Digital Technologies (IJDT)* | 2025 | Lead Author

**Blockchain-Based Certificate Verification System** *Lecture Notes in Networks and Systems (Springer)* | Jul 2024 | Lead Author

**Design and Evaluation of a DID-Based Accountability Framework for Resource-Constrained IoT Devices** *Lecture Notes in Networks and Systems (Springer)* | Jan 2026 | Lead Author

## PROJECTS

---

*Selected projects demonstrating end-to-end AI/ML development, deployment, and full-stack engineering.*

### 1. Brain Tumor Detection AI

**Problem Solved:** Assists doctors by automatically detecting brain tumors from MRI scans, reducing manual diagnosis time with 95%+ accuracy.

**Tech Stack:** TensorFlow, Keras (CNN), Flask, Python, Hugging Face Spaces

**Live:** [lovnishverma-braintumor.hf.space](https://lovnishverma-braintumor.hf.space)

### 2. NIELIT Ropar AI Assistant (Fine-tuned SLM)

**Problem Solved:** Eliminates inaccurate answers from generic LLMs by fine-tuning a domain-specific Small Language Model (Llama-3.2-1B) on NIELIT Ropar institutional data.

**Tech Stack:** Meta Llama-3.2-1B, Supervised Fine-Tuning (SFT), Gradio, Hugging Face

**Live:** [lovnishverma-nielit-assistant.hf.space](https://lovnishverma-nielit-assistant.hf.space)

### 3. Face & Emotion Recognition Attendance System

**Problem Solved:** Automates attendance marking using real-time face recognition and emotion detection, eliminating manual roll calls and proxy attendance.

**Tech Stack:** Python, OpenCV, Face Recognition Library, Deep Learning (CNN), Streamlit, SQLite

**Live:** [faceemotionielit.streamlit.app](https://faceemotionielit.streamlit.app)

### 4. SmartLane AI – Intelligent Traffic Management

**Problem Solved:** Optimizes traffic signal timing at 4-way intersections by detecting vehicle density and classifying emergency vehicles using AI.

**Tech Stack:** YOLOv8, CNN, OpenCV, Streamlit, Python

**Live:** [paranox-sourcecode.hf.space](https://paranox-sourcecode.hf.space)

### 5. SecureCert – Blockchain Certificate Verification

**Problem Solved:** Prevents certificate forgery by storing and verifying academic/professional certificates on the Ethereum blockchain.

**Tech Stack:** Python Flask, Ethereum, Solidity, Web3.js

**Live:** [sourcecode.pythonanywhere.com](https://sourcecode.pythonanywhere.com)

### 6. Intelligent Book Recommender

**Problem Solved:** Helps readers discover relevant books by using NLP-based plot similarity matching on a large Goodreads dataset, with sub-1-second response time.

**Tech Stack:** Sentence Transformers, NLP, Gradio, Python, Hugging Face Spaces

**Live:** [lovnishverma-book-recommendations.hf.space](https://lovnishverma-book-recommendations.hf.space)

## 7. Diabetes Risk Predictor

**Problem Solved:** Provides early diabetes risk assessment from clinical parameters, enabling preventive healthcare decisions.

**Tech Stack:** *Scikit-Learn (Ensemble ML), Streamlit, Pandas, Python, Hugging Face*

**Live:** [lovnishverma-diabetes.hf.space](https://lovnishverma-diabetes.hf.space)

## 8. NIELIT StudentHub – Zero-OpEx Knowledge Portal

**Problem Solved:** Delivers a fully serverless institutional knowledge management system at \$0 annual maintenance cost.

**Tech Stack:** *HTML/JS, Google Apps Script (Backend), Google Sheets (DB), GitHub Pages*

**Live:** [nielitropar.github.io](https://nielitropar.github.io)

## 9. Face Recognition Attendance System (Edge AI)

**Problem Solved:** Provides real-time face recognition attendance tracking with CUDA acceleration, optimized for edge devices like NVIDIA Jetson Nano.

**Tech Stack:** *Python, Dlib (CUDA), OpenCV (GPU), NumPy, NVIDIA Jetson Nano/Orin*

**Live:** [github.com/lovnishverma/FaceRecognition-Attendance](https://github.com/lovnishverma/FaceRecognition-Attendance)

## 10. NIELIT Smart Lab — Production IoT Home Automation System

**Problem Solved:** Provides a production-ready, remotely manageable IoT system for educational labs — enabling dual appliance control, live environmental monitoring, and wireless firmware updates without physical access to the device.

**Tech Stack:** *C++ (Arduino), ESP8266 (NodeMCU), DHT11 Sensor, Dual Relay Module, WiFiManager, REST API (JSON), OTA Firmware Updates, mDNS, EEPROM Persistence, HTTP Basic Auth*

**Live:** [github.com/lovnishverma/nielit-smartlab](https://github.com/lovnishverma/nielit-smartlab)

## 11. Certificate Automation System — Future Skills Prime (Govt. of India)

**Problem Solved:** Eliminated manual effort in issuing hundreds of unique certificates for government bootcamp participants (GOT-A, GOT-B & Bootcamp tracks) under the MeitY Future Skills Prime initiative — reducing issuance time from days to minutes.

**Tech Stack:** *Python, Django, ReportLab/FPDF (PDF generation), Mailjet API (bulk email), QR Code embedding, OpenPyXL/Pandas (Excel/CSV input)*

**Live:** [github.com/lovnishverma/certificate-email-sender](https://github.com/lovnishverma/certificate-email-sender) (Public Demo)

➤ For more projects visit: <https://github.com/lovnishverma>

## HOBBIES & INTERESTS

---

- **Content Creation:** Blogging on Medium.com; Social Media Content Creator
- **Social Media:** LinkedIn Networking & Community Building
- **Analytics & Data Science:** Open-Source Contributor, Data Analysis, ML/DL experiments, SEO Experimentation



Scan To Download Resume PDF: