Kinshuk Chauhan

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Education

Indian Institute of Technology, Mandi — Mandi, Himachal Pradesh
BTech. in Computer Science And Engineering (CGPA: 8.25) — *2023 – 2027*

- Relevant Coursework: Data Structures and Algorithms, Design of Algorithms, Mathematical Foundation of Computer Science, Data Science I, II, III, Introduction to DBMS, Formal Languages and Automata Theory.

St Peter's Senior Secondary School — Chandigarh
Class 12 – 93.8% — *2023*

St. John's High School — Chandigarh
Class 10 – 97% — *2021*

Experience

Hackathon Participant, CS671: Deep Learning and its Applications (with HCLTech) — May 2025
Indian Institute of Technology Mandi — *Mandi, India*

- Participated in a 3-day hackathon organized as part of CS671 and sponsored by HCLTech, involving over 300 students.
- Built the project *Capture Smart AI* to detect and classify image quality issues on Android devices.
- Collaborated in a team to design, train, and evaluate machine learning models for real-time quality detection.
- Secured 3rd place among all teams for our innovation in the assigned problem statement.

Deepfake Image Detection – CS671 Course Project — Mar 2025 – May 2025
Indian Institute of Technology Mandi — *Mandi, India*

- Built a deep learning pipeline to detect real vs. fake images using feature extractors like CLIP ViT-L/14, ViT-H/14, DINOv2, and SigLIP.
- Used frozen transformer-based vision-language encoders to extract semantic + generation-specific latent features from 700K+ images.
- Trained an SVM (RBF kernel) classifier on the extracted embeddings for binary classification with Hinge Loss.
- Achieved top accuracy of 83.5% on unseen deepfake generators, with 100% on ProGAN, 98.2% on CycleGAN, and 93.5% on StyleGAN.

Projects

Adobe Hackathon – Challenge 1B: Persona-Driven Document Intelligence
Python, NLP, scikit-learn, spaCy, Docker — GitHub

- Built a **persona-aware document retrieval system** to extract and prioritize relevant sections from multi-PDF collections.
- Developed modular pipeline with **DocumentProcessor, PersonaJobAnalyzer, RelevanceScorer, and SubSectionAnalyzer**.
- Ensured **CPU-only execution**, **less than 60s processing time** for 3–5 documents, and **model size less than 1GB**.
- Produced structured **JSON outputs** with relevance scores, supporting downstream integration in research workflows.

Veriscope Project | *Python, Deep Learning, Image Processing* — GitHub

- Developed a deep learning application for analyzing vascular patterns in eye images to assess vascular health.
- Implemented vessel segmentation and feature extraction techniques to quantify vessel density, tortuosity, and branching patterns.
- Applied advanced image processing methods to enhance the accuracy of vascular feature detection.

Capture Smart AI | *Python, Machine Learning, Android Development* — GitHub

- Developed an AI-powered application for detecting and classifying image blur and shutter speed issues in photographs.
- Trained machine learning models to accurately identify and categorize various image quality problems.
- Integrated the models into an Android application to provide real-time feedback on image quality.

Technical Skills

Languages: Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, Java
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, Eclipse
Libraries & Frameworks: NumPy, pandas, Matplotlib, scikit-learn, PyTorch, TensorFlow
Machine Learning: Supervised/Unsupervised Learning, Model Evaluation, Feature Engineering, Neural Networks, CNNs