

# Aman Shukla

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MCA graduate with hands-on experience in machine learning, data preprocessing, and deep learning-based computer vision projects. Built fracture detection and multimodal extraction systems, along with full-stack applications using MERN. Seeking entry-level AI/ML or data roles focused on applied problem-solving.

## Projects

### Failure-Aware Multimodal ML System

- Built a failure-aware multimodal ML system using uncertainty estimation and stability checks with human-in-the-loop routing.
- Designed a unified inference pipeline for OCR, medical imaging, and video with explicit failure detection and audit logging.

### Multimodal MCQ Extraction Pipeline

- Built an OCR-based pipeline to extract MCQ candidates from noisy classroom lecture videos.
- Applied temporal stabilization and weak supervision for scalable, automated candidate generation

## Research Experience

### Bone Fracture Detection from X-ray Images

Under Process

- Designed and benchmarked CNN and transfer-learning architectures for X-ray fracture detection under controlled experimental protocols.
- Evaluated model robustness using F1, MCC, AUC-ROC, and mIoU to mitigate accuracy-only bias in imbalanced datasets.

### Why Full Automation Failed: An Empirical Study

- Empirically analyzed accuracy ceilings in automatic MCQ reconstruction from classroom board videos.
- Identified structural data limitations through failure-mode and system-level analysis.

## Experience

### Frontend Development Intern

- Developed and maintained responsive web interfaces using **React, HTML, CSS, and JavaScript**.
- Integrated frontend components with backend APIs and handled dynamic data rendering.
- Collaborated with team members using **Git** for version control and basic code reviews.

## Education

**Banaras Hindu University,**

Aug 2022 - Nov 2024

**Master of Computer Application (MCA) CGPA: 6.8**

**Banaras Hindu University**

Aug 2019 - Jul 2022

**Bachelor Of Computer Science (B.Sc. CGPA: 7.9**

## Core Skills

Python, Data Preprocessing & Cleaning, Exploratory Data Analysis (EDA), Machine Learning (Classification), Deep Learning (CNNs), TensorFlow / Keras, NumPy & Pandas, OpenCV, Git & GitHub