Durgesh Singh Gour

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EDUCATION

Indian Institute of Information Technology, Una — HP, India
Bachelor of Engineering in Information Technology — *2024 – 2028*

SKILLS

Technical: Machine Learning, NLP, Computer Vision, GenAI , CI/CD, MLOps .
Libraries: NumPy, Pandas, Matplotlib, Seaborn, OpenCV, Scikit-Learn .
Frameworks: Langchain, Flask, FastAPI, Streamlit, TensorFlow, Keras, PyTorch(basic), MLflow.
Tools: AWS, Git, GitHub, Docker, MongoDB, Jupyter Notebook, HuggingFace .
Languages: Python, C, C++ .

EXPERIENCE

ML Engineer Intern — Sept 2025 – Present
PropGrowthX — *Remote, India*

- Conducted comprehensive **data analysis on real-world** real estate datasets to extract actionable insights for property investment risk assessment and predictive **ROI modeling.**
- Developed ML models achieving **87%** accuracy in **real estate** price prediction and **market trend forecasting**, leveraging **geospatial** and **satellite** data to deliver hyperlocal insights and **reduce RMSE by 25**%.
- Built data preprocessing pipelines for cleaning, transforming, and feature engineering on demographic and property datasets, improving model accuracy and reducing data processing time.

Research Intern — Jun 2025 – Aug 2025
IIITDM Jabalpur — *MP, India*

- **Authored a research paper** presenting **AgriSpect**, a platform for real-time plant and fruit monitoring using YOLOv8, YOLOv11, and RT-DETR models, integrating advanced computer vision with practical agricultural monitoring.
- Leveraged Roboflow to execute sophisticated **data augmentation strategies**, boosting the computer vision model's generalizability across varied environmental conditions **reduced** model **failure** rate by **15**%

PROJECTS

Rockfall Predictor — End-to-End ML Pipeline — Sep 2025 – Oct 2025

- Built end-to-end ML pipeline predicting rare rockfall events from sensor and weather data, implementing workflow from MongoDB ingestion through model training with XGBoost, **achieving 85% precision** on **minority** class events.
- Engineered **30+ temporal** features including rolling windows, lag values, and z-scores with time-aware splits. Generated 12,000 synthetic samples to handle severe class imbalance (1:20 ratio).
- Applied Random Forest feature selection reducing dimensions by **40%, trained** models with probability calibration and custom thresholds improving rare event detection by **32% over baseline**.
- Implemented **MLflow** tracking and centralized logging for reproducible experiments.
- **Tech Stack**: Python, pandas, scikit-learn, XGBoost, imbalanced-learn, Optuna, MLflow, MongoDB, Docker, YAML schemas.

AgriSpect — AI Crop Monitoring Platform — Jun 2025 – July 2025

- Developed a web-based application for **automated detection and counting** of plants and fruits in agricultural images and videos using state-of-the-art object detection models (YOLOv8, YOLOv11, RT-DETR).
- Streamlined data preparation using Roboflow, **annotating 5,000+ images** and applying advanced data augmentation techniques, increasing model **generalizability** by **30**% and improving detection rates in diverse field conditions.
- Deployed an intuitive **Streamlit** interface for detection models, processing diverse inputs (images, videos, webcam) and delivering predictions in under **0.5** seconds.
- Implemented and benchmarked deep learning models for real-time object detection, achieving fruit counting precision above **95% on test datasets.**
- **Technologies**: Python, YOLOv8/v11, RT-DETR, OpenCV, Streamlit, Roboflow, DeepSORT, NumPy, Pandas, CUDA, Git
- **Frameworks and Tools**: Ultralytics, PyTorch , TensorRT, Matplotlib, Google Colab

CERTIFICATIONS

IIITDM Jabalpur Summer School on Deep Learning (May 2025 – June 2025)
Completed intensive training covering CNNs, RNNs, Transformers, GANs, LLMs, and hands-on projects using TensorFlow and PyTorch, **Worked on a capstone project**: ASL Alphabet Recognition using Deep Learning.

Machine Learning Specialization (DeepLearning.AI & Stanford Online (Coursera))

Complete Machine Learning & Data Science Bootcamp (Udemy (Instructor: Krish Naik))

Complete Generative AI Course With Langchain and Huggingface (Udemy (Instructor: Krish Naik))