

SUMIT CHOUHAN

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EDUCATIONS

Indian Institute of Information Technology, Design and Manufacturing <i>Bachelor of Technology</i> Bachelor of Technology, specializing in Computer Science and Engineering	Jabalpur, India	Aug 2023 - May 2027
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WORK EXPERIENCES

Core Member - ML Team <i>Aero Fabrication Club</i> - Created and labeled a 1,800-image multi-class dataset; optimized YOLO models for edge inference, reducing latency by 70% through parameter tuning. - Built and deployed real-time object detection systems developed using Python scripts for data collection, annotation, and real-time video feed processing, using YOLOv4-Tiny and other computer vision models for aerial drones. - Used Git for version control and collaborated across hardware and software teams to deploy CV solutions on edge devices. <i>Technologies / Skills Used : Python, OpenCV, TensorFlow, PyTorch, YOLO, IoT</i>	Dec 2024 - Present Jabalpur, India
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PROJECTS

PINNs for Incremental Sheet Forming (ISF) - Developing a Physics-Informed Neural Network (PINN) to solve partial differential equations (PDEs) governing material deformation. - Reduced computational time by 90% compared to traditional FEA simulations by embedding stress-strain constraints into the loss function. - Achieved 85% accuracy in predicting residual stress and forming force, validating results against experimental data. <i>Technologies / Tools Used : Python, TensorFlow, Feature Engineering, FEA</i>	
PolicyCheck: RAG-based Insurance Assistant 📧 - Architected a Retrieval-Augmented Generation (RAG) system to automate the analysis of complex insurance policy documents. - Built a document scraper to structure unstructured text, enabling a 40% reduction in query response time. - Implemented semantic search to handle user queries regarding health coverage, ensuring high context awareness and minimizing hallucinations. <i>Technologies / Tools Used : LangChain, Vector DBs, LLMs</i>	Aug 2025
KharchaKitna 📧 📧 - Deployed an end-to-end ML web app to predict student monthly expenses using Random Forest regression. - Conducted extensive EDA and feature engineering on survey data and managed the full ML lifecycle from data collection to deployment. - Experience in reproducible experiments and model tracking — useful for iterative hyperspectral model development. <i>Technologies / Tools Used : Scikit-learn, Pandas, Streamlit</i>	July 2024

SKILLS

Frameworks & Libraries :	RAG, Generative AI, Physics-Informed Neural Networks (PINNs), OpenCV, YOLO, PyTorch, TensorFlow, Scikit-learn, LangChain, Pandas, NumPy, FastAPI, Streamlit
Programming Languages :	Python, C++, SQL, JavaScript
Tools & Platforms :	Git, Docker, AWS, Hugging Face, Linux/Bash

AWARDS & ACHIEVEMENTS

- Developed high-performance AI vision models using synthetic data.

CERTIFICATIONS

LEADERSHIP & VOLUNTEER EXPERIENCE

Co-coordinator - Actively led and managed training sessions for college athletes, promoting fitness culture through organized practice. - Represented IIITDMJ at the national level, securing Gold Medals in 1500m and 5000m long run events.	Athletics Club, IIITDM Jabalpur
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