

Kumar Akshat

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[Github](#)

[Linkedin](#)

SKILLS

Frameworks and Tools: Pytorch, Tensorflow, Scikit-learn, Keras, Flask, Docker, Git, AWS, MySQL

Libraries: NumPy, Pandas, Matplotlib, Seaborn, OpenCV, React.js

Languages: Python, C, C++, Java, HTML, CSS, SQL, Matlab

EXPERIENCE

TestAlng Solutions Pvt Ltd

Jun 2024 - Aug 2024

Machine Learning Engineer Intern

- Conducted in-depth analysis of dimension tables to identify **primary key** columns and **foreign key** columns in fact tables based on calculation of unique ratio in the columns.
- Empowered **Pearson correlation** and **cosine similarity** methods(for numerical datatypes) and **Jaccard similarity Chi square statistic**(for categorical datatypes), optimizing schema design for enhanced data consistency by **50%**.
- Acquired expertise in **GANs** such as **CTGAN** and **TVAE**, generating high-quality synthetic data, followed by correlation analysis and model training with real and synthetic datasets to ensure comparable accuracy.
- Spearheaded learning of **Variational Autoencoders (VAE)** for integration with **Generative Adversarial Networks (GANs)**, focusing on enhancing model performance on tabular data can led to reduce training time by **15%**.
- Tech: Pandas | NumPy | Scikit-learn | SDV (CTGAN, TVAE) | PyTorch | Matplotlib | Seaborn**

Research Intern, Indian Institute of Technology, Bhilai

Jun 2024 - Jul 2024

- Conducted a research internship focused on road anomaly detection, leveraging computer vision techniques to identify surface defects such as cracks and potholes with high accuracy.
- Built and trained a custom object detection model using **YOLOv8** on a Roboflow-augmented dataset of over **2,000** labeled images, achieving a mean Average Precision (mAP) of **91%** on test data.
- Constructed wrong-way vehicle movement detection system in real-time from dashcam and surveillance feeds, operating at **20 FPS** with **93%** detection accuracy.
- Tech: Python | YOLOv8 | OpenCV | Tensorflow | Roboflow**

PROJECTS

vaultcv.ai - AI Resume Analyzer & Redactor | [Link](#)

Mar 2025 - Apr 2025

- Developed a full-stack AI-powered Resume Analyzer and Redactor using **React.js**, **Python Flask** and **MongoDB**, achieving **70%** job match accuracy through NLP-driven skill extraction, job description comparison, and dynamic ATS score computation.
- Implemented advanced Named Entity Recognition (NER) models using **spaCy** and **HuggingFace Transformers** to automatically redact sensitive information (emails, phone numbers, companies), reducing privacy risk exposure by **60%**.
- Engineered an ATS scoring algorithm by integrating keyword match algorithms, formatting validation, and grammar checks, reducing resume rejection rates by **60%** and cutting manual tailoring effort by **70%**.
- Tech: React.js, Flask, MongoDB, scikit-learn, OpenAI API, JWT**

wildsentinel.ai - Wildlife Monitoring System | [Link](#)

Jul 2024 - Oct 2024

- Developed a **YOLOv8** model from scratch on custom datasets and trained it with an accuracy of **92%**.
- Evaluated model performance using key metrics, including the confusion matrix, F1 score, precision-recall curves.
- Leveraged OpenCV to perform detection and tracking based on the prediction of the custom model with **1 ms** runtime speed.
- Integrated predictive output into the centralized dashboard that can decrease manpower by **50%**.
- Tech: YOLO, OpenCV, Flask, MySQL, QGIS, AWS, Docker**

Brain Tumor Detection | [Link](#)

Sep 2024 - Nov 2024

- Built a deep learning model using Resnet-50, CNN architecture, achieving **93.2%** accuracy and **94.8%** precision in the binary classification of brain tumour from MRI images, ensuring high diagnostic reliability.
- Enhanced model performance through advanced preprocessing techniques and data augmentation over **3,000+** MRI scans, improving model robustness and expanding data variability by over **50%**.
- Created **REST API** with Python **Flask** integrated model with **Pickel**, **React web app** for the front end and **Dockerized** the whole.
- Tech: Pytorch, Resnet-50, Python Flask, React.js**

EDUCATION

National Institute of Technology, Arunachal Pradesh

BTech, Mechanical Engineering

Nov 2022 - Jun 2026

CGPA: 8.08

ROS Public School, Sitamarhi

AISSCE, CBSE

Apr 2019 - Mar 2021

78%

ACHIEVEMENTS AND CERTIFICATIONS

- Qualified for **round 2** of NetElixir Algnition Hackathon over **50,000+** registrations.
- Flipkart Grid 5.0 semifinalist team alongside **1,300+** others from among **300,000+** registrations.
- Smart India Hackathon (SIH) 2024** Internal Hackathon Winner.
- Mastering Data Structures and Algorithms using C and C++ on Udemy.
- Infosys Springboard Young Industry Enthusiast – Capital Markets certification.
- Walmart USA** Advanced Software Engineering simulation.