



Saurabh Yadav

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Technical Skills: Machine Learning (3/5), Deep Learning (3/5), Power BI (3/5), C++ (3/5), Python (2/5), PyTorch (3/5).

Certification:

- [IBM Watsonx Certificate](#)
- [PyTorch Certificate by OpenCV University](#)
- [Smart Bridge Externship Certificate](#)

EDUCATION			
Board	Tenure	Educational institution	CGPA/Percentage
B. Tech (CSE)Cyber	2022 –2026	VIT Bhopal University	8.24 CGPA
Class XII	2021 - 2022	St. Fidelis School, Aligarh	64.4%
Class X	2019 - 2020	St. Fidelis School, Aligarh	80.3%
PROJECTS			
U-Net Implementation for Cell Segmentation and Tracking	<p>U-Net Implementation for Cell Segmentation and Tracking GitHub: [link-to-repo] June 2025 – Present</p> <ul style="list-style-type: none">• Designed and built a U-Net model from scratch using PyTorch, focusing on high-fidelity reproduction of the original U-Net architecture (unpadded convolutions, ConvTranspose2d for upsampling, Kaiming initialization).• Enhanced model performance on challenging DIC-C2DH-HeLa datasets by developing a custom pixel-wise weight map in the loss function and implementing robust elastic deformations via albumentations for data augmentation.• Architected an overlap-tile inference pipeline to efficiently process large-resolution images beyond GPU memory limits, ensuring seamless predictions without border artifacts.• Led the quantitative evaluation phase using py-ctcmetrics, proactively identifying and deep-diving into critical issues such as res_track.txt inconsistencies and the fundamental requirement for instance segmentation (versus binary output) for accurate SEG metric calculation.• Articulated a clear roadmap for future improvements, including strategies for robust instance mask generation and advanced tracking data debugging, showcasing strong analytical and forward-thinking skills.• Core Skills: Deep Learning, Computer Vision, U-Net Architecture, Image Segmentation (Instance/Binary), Cell Tracking, PyTorch, Data Augmentation, Custom Loss Functions, Troubleshooting, Problem Solving, Data Analysis		
Power BI Dashboard: Road Accident Analysis	<p>Power BI Dashboard: Road Accident Analysis</p> <p>Designed and developed a 8-page Power BI dashboard for comprehensive road accident analysis. Utilized DAX and interactive visualizations to present key performance indicators (KPIs), temporal trends, geographic hotspots via mapping, and contributing factors (e.g., weather, speed, junction type). Implemented risk scoring to identify high-risk areas, enabling data-driven insights for safety improvements.</p>		
Employee-Performance-Prediction	<p>Productivity Prediction Web App GitHub: [link-to-repo] May 2025 – Present</p> <ul style="list-style-type: none">• Developed a machine learning web app to predict garment worker productivity using Random Forest and XGBoost, achieving ~50% accuracy with Python, Scikit-learn, and Pandas; deployed via GitHub on Render.• Engineered 14 features from a garment productivity dataset, including categorical encoding of quarter and department, and imputed missing WIP values to enhance model performance using Pandas.• Trained and evaluated Random Forest and XGBoost models on a dataset of 1197 records, optimizing for actual productivity prediction with Scikit-learn and hyperparameter tuning.• Implemented data preprocessing pipelines to handle categorical (e.g., day, team) and numerical features (e.g., SMV, overtime) using Pandas and NumPy, improving model robustness.• Designed a dual-model prediction system comparing Random Forest and XGBoost outputs, enabling users to input features like targeted productivity and no_of_workers for real-time insights.• Utilized GitHub for version control and deployment, ensuring seamless integration of ML models (rf_model.sav, xgb_model.sav) with a web interface for accessibility.		
EXPERIENCE			
Smart Bridge	<p>Virtual Internship Program as a Machine Learning Intern from 19 May 2025 to 05 July 2025</p> <ul style="list-style-type: none">- Completed an intensive Virtual Internship Program as a Machine Learning Engineer with SmartBridge & SmartInternz from May 19, 2025, to July 05, 2025. During this program, I gained hands-on experience and a strong understanding of core machine learning concepts. I developed practical skills in applying ML principles, preparing me for real-world challenges in the field.		
CO-CURRICULAR			
Coding	▪ Leet Code – 40+ Questions solved Hacker Rank – 4 Star in C++		
Patent	▪ Indian Patent granted for an innovative evaporative air conditioner design.		