Asang Triratna Ingle

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About Me

Passionate Machine Learning and Deep Learning enthusiast with experience in computer vision, predictive analytics, and AI-driven automation. Proficient in CNN architectures (YOLO, U-Net, ResNet), traditional ML models and optimization techniques. Skilled in TensorFlow, OpenCV, and Flask, with hands-on projects in image processing, classification, and real-time monitoring. Excited to apply AI for impactful solutions.

Education

Indian Institute of Information Technology, Nagpur, Maharashtra, India
B.Tech in Electronics and Communication Engineering Nov 2022 – Jun 2026

Shri.Radhakisan Laxminarayan Toshniwal College of Science, Akola, Maharashtra, India
HSC Jan 2020 – JULY 2021

Projects

Deep Learning for Traffic Speed Monitoring GitHub Link

- Developed a real-time traffic speed monitoring system using YOLOv8 (CNN-based) for vehicle detection and SORT for tracking, ensuring accurate identification and speed estimation.
- Implemented a region-specific analysis tool and automated logging to capture and store images of overspeeding vehicles for reporting.
- Utilized Python, OpenCV, TensorFlow, and CNN models for seamless video processing, object detection, and deep learning model integration.
- Optimized for real-time performance with modular design, speed tracking customization, and enhanced visualization for effective monitoring.

U-Net Denoising & CNN-Based Dog-Cat Classification GitHub Link

- Built a **U-Net-based deep learning model** for image denoising, improving image clarity and classification accuracy.
- Preprocessed and augmented datasets using **OpenCV and TensorFlow**, applying resizing, normalization, and noise addition.
- Developed a **CNN-based classifier** for dog vs. cat classification, leveraging data augmentation for improved generalization.
- Applied **class balancing techniques** and **Adam optimizer**, achieving high accuracy in pet image classification.

Calorie Burn Prediction Using XGBoost and Flask GitHub Link

- Developed a Flask-based web app for real-time calorie burn prediction using XGBoost regression.
- Trained and optimized a machine learning model on exercise and calorie datasets with feature engineering.
- Integrated model persistence using Pickle, enabling efficient loading and inference.
- Implemented a user-friendly interface for input handling, prediction display, and seamless deployment.

Fraud Detection using Machine Learning GitHub Link

- Developed a fraud detection system using **Random Forest** on SMOTE-resampled data, achieving **99.95% accuracy** and **0.9990 MCC**.
- Handled class imbalance through **SMOTE** and optimized feature selection based on transaction behavior.
- Evaluated model performance using confusion matrix, F1-score, and precision-recall metrics; visualized results with Seaborn and Matplotlib.

Technical Skills

- **Languages:** Python, Embedded C
- **ML Frameworks:** Pandas, Numpy, Scikit-learn, Keras, TensorFlow, OpenCV
- **Data Science Tools:** NumPy, Pandas, Matplotlib, Scikit-learn, Seaborn
- **Deep Learning Expertise:** Computer Vision (OpenCV, YOLO), Neural Networks (ANN,CNNs, RNNs), Model Optimization