AWANTIKA SRIVASTAVA

Data Scientist | Computer Vision & Edge AI Engineer

+91-8920482037 |sawantika81@gmail.com| LINKEDIN |Github

PROFILE SUMMARY

Data Scientist with **2+ years of hands-on experience** in building, training, optimizing, and deploying **deep learning–based computer vision and AI systems** for **real-time video analytics and edge environments**. Strong expertise in **object detection, CNN architectures, video processing, low-latency inference, and production deployment** using **TensorFlow, PyTorch, OpenCV, Docker, and cloud platforms**. Proven ability to design **end-to-end AI/ML pipelines**, collaborate with backend and DevOps teams, and monitor model performance in real-world production settings.

CORE TECHNICAL SKILLS

- **Programming Languages & Tools:** Python, C++, Numpy, Pandas, Scikit-learn, OpenCV, REST APIs
- **Statistics & Mathematics:** EDA, Statistical Modeling, Hypothesis Testing, Probability, Linear Optimization, Trend Analysis.
- **Machine Learning:** Supervised & Unsupervised Learning, Regression, Classification, Clustering, Random Forest, Decision Trees, SVM, KNN, K-Means, XGBoost, Hyperparameter Tuning.
- **Deep Learning & AI:** Neural Networks, CNN, RNN, LSTM, Transformers (BERT), Transfer Learning, Model Fine-tuning, RAG, LLMs.
- **Frameworks:** TensorFlow, Keras, Pytorch, Flask.
- **Computer Vision**: Image Classification & Preprocessing, Object detection (YOLO, SSD, MobileNet, ResNet), Real-Time Video Analytics, Motion Analytics, Tracking, Data Augmentation.
- **Video & Streaming:** CCTV / Streaming Video Analytics RTSP, OpenCV Video I/O
- **Edge AI & Model Optimization:** Edge Deployment, Low-Latency Inference Quantization, Lightweight Architectures, TensorFlow Lite Optimization.
- **MLOps & Deployment:** Docker, CI/CD Pipelines, Model Monitoring, Logging, Basic MLOps Practices, SDLC.
- **Cloud & Platforms:** AWS (EC2, S3 – Hands-on), Edge / Embedded AI Environments.

EXPERIENCE

Data Scientist / Machine Learning Engineer (Computer Vision) | PPS International Pvt. Ltd. **January 2024-Present**

- Designed and implemented **production-grade AI/ML and computer vision pipelines** for real-world video analytics use cases.
- Built **end-to-end CV systems** including data ingestion, preprocessing, model training, evaluation, deployment, and monitoring.
- Trained and fine-tuned **CNN-based object detection models** using **TensorFlow and PyTorch**.
- Optimized **model inference pipelines** to meet **real-time and low-latency constraints**.
- Collaborated closely with **backend and DevOps teams** to deploy models using **Docker**.
- Evaluated and monitored model performance in production using **CV-specific metrics**.
- Addressed real-world challenges such as **motion blur, occlusion, low-light conditions, and varying camera angles**.

PROJECTS

Railway Driver Assistance System (RDAS) | Enterprise ML Project

- Designed and deployed an **end-to-end real-time computer vision system** for unsafe driver behavior detection from CCTV and streaming video data.
- Built scalable **video ingestion, frame sampling, preprocessing, and data augmentation pipelines** for large-scale model training.
- Trained and fine-tuned **CNN-based object detection models (SSD MobileNet)** using TensorFlow on annotated video datasets.
- Achieved **20–25 FPS real-time inference with <150 ms latency** through model and pipeline optimization.
- Converted trained models to **TensorFlow Lite** and deployed them in **edge environments** for low-latency inference.
- Addressed real-world challenges such as **motion blur, occlusion, low-light conditions, and camera angle variations** through iterative experimentation.
- Implemented **model evaluation, error analysis, and performance monitoring** to ensure production stability.
- Integrated model outputs with downstream systems using **REST APIs** for alerting and event-based decision support.

Chatbot using LLM & RAG | Applied ML Project

- Built and deployed a **production-ready LLM-based chatbot** using **Retrieval-Augmented Generation (RAG)** for context-aware question answering.
- Implemented **document ingestion, embedding, retrieval, and prompt engineering** to improve response accuracy and consistency.
- Developed **Python-based inference services** and deployed the application using **Streamlit** for real-time interaction.

YouTube Comments Sentiment Analyzer | link - https://youtube-ai-analyzer-ndzqo6r2mepjrtsdjmwaxl.streamlit.app/

- Deployed transformer-based **NLP models** as **production-ready** services with **REST APIs**.
- **Fine-tuned** and served a **DistilBERT**-based **sentiment** classification model for large-scale text inference.
- **Built** and deployed an interactive **streamlit web application** to perform real-time **sentiment analysis** on YouTube comments.
- **Processed** high-volume text **data** with sub-second inference **latency** for real-time sentiment analysis.

CERTIFICATION

- IBM Data Science & AI Certification
- AWS Generative AI with Large Language Models
- OpenCV Computer Vision Certification

EDUCATION

IMS Engineering College, Ghaziabad **September - 2020**
Bachelor of Technology (Electrical and electronics engineering)