# AWANTIKA SRIVASTAVA

**Machine Learning Engineer | AI Engineer | Computer Vision & Deep Learning**

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

## PROFILE SUMMARY

Machine Learning Engineer with **2+ years of hands-on experience** in designing, training, optimizing, and deploying **deep learning and computer vision models** for real-world production systems. Strong expertise in **CNN-based architectures, object detection, image classification, real-time video analytics**, and **low-latency edge inference**. Experienced with **PyTorch and TensorFlow**, model optimization techniques such as **quantization**, and deploying ML solutions on **AWS cloud platforms**. Proven ability to work independently, run structured experiments, and collaborate with cross-functional teams to deliver **scalable, secure, and production-ready ML systems**.

## CORE TECHNICAL SKILLS

- **Programming Languages & Tools:** Python, Numpy, Pandas, Matplotlib, Scikitlearn, C++, SQL, Git, GitHub, Flask
- **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, Feature Engineering.
- **Deep Learning & GenAI:** Neural Networks, CNN, RNN, LSTM, Transformers (BERT), Transfer Learning, Model Fine-tuning, RAG, LLMs
- **Deep Learning Frameworks:** PyTorch, TensorFlow, TensorFlow Lite
- **Computer Vision**: Image Classification & Preprocessing, Image Segmentation, Object detection (YOLO, SSD, MobileNet, ResNet), Video Analytics, OpenCV
- **Model Optimization & Performance:** Model Quantization, Low-Latency Inference, Edge Deployment, Performance Optimization, Accuracy vs Latency Trade-offs
- **NLP**: Text preprocessing, Tokenization, Chunkins, Transformers, Sentiment Analysis, Semantic Search, Transformer-based models, NLTK, SciPy, Spacy.
- **Databases & Data Handling:** SQL Queries, MySQL, SQL Server, MongoDB, Large-scale Dataset Processing
- **Cloud & MLOps:** AWS EC2, AWS SageMaker, EC2, ML Pipelines, Experiment Tracking, Model Deployment, Docker

## EXPERIENCE

**Machine Learning Engineer / Applied AI Engineer | PPS International Pvt. Ltd.** **January 2024-Present**

- Designed, trained, and deployed **CNN-based deep learning models** for **real-time computer vision safety systems.**
- Implemented the **end-to-end ML lifecycle**, including data collection, preprocessing, feature engineering, model training, evaluation, and deployment.
- Optimized deep learning models using **TensorFlow Lite quantization** techniques to achieve **low-latency inference** on **edge devices** with constrained CPU and memory.
- Built and maintained **real-time inference pipelines** for continuous video stream processing.
- Developed a **Flask-based web application** to visualize AI detections and automatically record video events for monitoring and analysis.
- Collaborated with developers to ensure **system performance**, focusing on **latency, accuracy, scalability, and reliability**.
- Worked with **large video datasets** and managed long-running training and inference workloads.
- Delivered **production-ready ML solutions** while working independently under minimal supervision.

## PROJECTS

**Railway Driver Assistance System (RDAS) | Enterprise ML Project**

- **Designed** and deployed a real-time computer vision–based ML system to **detect** unsafe driver behaviors from **continuous video streams**.
- Trained and optimized **CNN-based object detection** model (SSD **MobileNet** architecture) to perform **real-time inference** on video data.
- Implemented **end-to-end ML pipelines** covering data ingestion, **preprocessing**, **model training**, **evaluation**, and **production** inference.
- Achieved **20–25 FPS** real-time processing with **<150** ms inference latency by optimizing modelsfor deployment.
- Built and integrated a **Flask-based web interface** to **visualize** detections and automatically **recorded 30-second** event clips, **reducing** manual review effort.

**Amazon Stock Price prediction | Applied ML Project**

- Developed **an LSTM-based** time series forecasting model using historical data of **50K+ records** to predict future **trends**.
- Applied data normalization**, sequence modeling**, and **feature selection**, improving forecast accuracy by **18–22%.**
- **Optimized** model performance through **hyperparameter** tuning, reducing validation loss **by 20%.**
- Evaluated models **using RMSE and MAE**, ensuring reliable **performance** on unseen data.
- Built reusable **Python ML pipelines** for **training**, **evaluation**, and inference.

**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)**