Utkarsh Yadav

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SUMMARY

Innovative Data Scientist with strong foundations in ML, DL, NLP, and statistical modeling. Deployed scalable AI solutions using AWS, Docker, and Flask. Known for combining mathematical rigor with production-ready pipelines. Skilled in building end-to-end machine learning systems, from data preprocessing to deployment. Passionate about translating theoretical principles into efficient models. Experienced with CI/CD pipelines, cloud infrastructure, and real-time applications. Adept at working across domains such as computer vision, speech recognition, and recommendation systems to solve real-world problems with measurable impact.

PROJECT

Object Tracking

• Developed an advanced object tracking system by integrating **YOLOv5** for real-time object detection and **DeepSORT** for robust multi-object tracking.
• Leveraged deep learning techniques to achieve high accuracy in object detection, employing **Convolutional Neural Networks (CNNs)** and transfer learning methodologies.
• Optimized the tracking pipeline for performance, implementing Kalman filtering and Hungarian algorithm for data association, ensuring efficient and reliable tracking in real-world scenarios.

Sign Language Detection

• Created a real-time Sign Language Recognition system using **OpenCV**, **Mediapipe**, and **TensorFlow** for accurate hand gesture tracking and classification.
• Designed and trained an **LSTM-based neural network** to recognize sign language gestures, leveraging deep learning, time-series analysis, and computer vision techniques.
• Optimized model performance for real-time applications, integrating custom datasets, data augmentation, and efficient inference pipelines for deployment.

Speech Emotion Recognition

• Developed a Speech Emotion Recognition system employing **Librosa** for feature extraction and **TensorFlow** for constructing and training **neural networks**.
• Created a **Convolutional Neural Network (CNN)** model to accurately classify emotions from audio signals, utilizing **Mel-frequency cepstral coefficients (MFCCs)** and **spectrograms** as input features.
• Enhanced model performance through techniques like **data augmentation, hyperparameter tuning, and crossvalidation**, achieving improved accuracy in emotion classification tasks.

EDUCATION

Bachelor of Technology

Jaypee University of Engineering and technology Guna • Guna, Madhya Pradesh • 2026

SKILLS

C++, C, Java, Python, Machine Learning, Deep Learning, Natural Language Processing (NLP), Flask, Mongo DB, Computer Vision (Tensorflow, Keras, PyTorch), Statistics, MySQL, Git, Docker, AWS, Github

INVOLVEMENT

- **Flipkart Grid 6.0 (Software Development Track)**
  Successfully completed round 1 and received an invitation from Flipkart for DSA round based on performance
- **GDSC Leadership Role**
  Served as Google developer Student Club (GDSC) coordinator at college, organizing technical workshops and fostering a community of student developers (2024-present)
  Successfully shortlisted for Google developer Student Club (GDSC) from college 2024, demonstrating exceptional coding skills and open source contribution capabilities.
- **Technical Workshop Facilitation**
  Conducted hands on technical workshops focusing on emerging technologies, enhancing peer learning and skill development across campus.