

DIVYA KHUNT

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🐙 github.com/divyakhunt 🌐 divyakhunt-portfolio.vercel.app

SUMMARY

Machine Learning Engineer with strong foundations in deep learning, computer vision, NLP, and audio processing. Skilled in Python and building scalable, intelligent systems with clean, research-driven implementation. Passionate about ethical AI and solving real-world problems through data-driven innovation.

TECHNICAL SKILLS

Languages: C, C++, Python, Java, HTML, CSS, JavaScript
Machine Learning: scikit-learn, XGBoost
Data Analysis & Visualization: NumPy, Pandas, Matplotlib, Seaborn
Deep Learning: TensorFlow, Keras, PyTorch
Computer Vision: OpenCV, MediaPipe
Natural Language Processing: NLTK, spaCy, Word2Vec
Speech & Audio Processing: Librosa, SoundFile, pytsx3
Tools & Frameworks: Jupyter Notebook, Google Colab, VS Code, Git/GitHub

EDUCATION

Sarvajanik College of Engineering and Technology (SCET) <i>B.Tech in Computer Engineering</i> — CGPA: 9.52 / 10	Aug 2022 – May 2026 Surat, Gujarat
P.P. Savani Vidhyabhavan <i>Higher Secondary Certificate (HSC), GSEB</i> — Percentage: 77.54%	Mar 2022 Surat, Gujarat

PROJECTS

Speech Emotion Recognition (CNN-BiLSTM) 🔗 | TensorFlow, Keras, Librosa, SoundFile

- Designed a CNN-BiLSTM model for speech emotion recognition using MFCC, Chroma, ZCR, and RMS features.
- Balanced distribution with data augmentation and trained on RAVDESS, TESS, CREMA-D, and SAVEE datasets.
- Optimized with early stopping, ReduceLROnPlateau, and batch normalization to prevent overfitting.

Sign Language to Speech Translator 🔗 | TensorFlow, MediaPipe, OpenCV, pytsx3

- Built a DNN system to recognize both-hand gestures using MediaPipe and convert them to speech via pytsx3.
- Wrote modular scripts for data capture, model training, and OpenCV-based inference with sub-2s response.
- Enabled gesture updates via CSV and retraining; visualized training metrics for performance tracking.

Next Word Prediction Web App 🔗 | TensorFlow, Flask, Bi-LSTM, NLP

- Built a Flask app that predicts the next word in real-time using a Bi-LSTM model trained on Sherlock Holmes text.
- Processed and tokenized text data; trained the model for next-word prediction with smooth frontend integration.
- Enabled keyboard interaction for fast word insertion by pressing Tab; deployed the app live using Hugging Face.
- Optimized model and code for real-time inference with low latency.

Image Captioning (DenseNet201 + LSTM) 🔗 | TensorFlow, Keras, NLP

- Generated image descriptions using DenseNet201 as encoder and LSTM as decoder.
- Preprocessed captions, extracted features, and trained on Flickr8k with 5 captions per image.
- Built a custom data generator and used greedy search to generate coherent captions.
- Serialized features and tokenizer for efficient inference and deployment.

Facial Emotion Recognition (ResNet50) 🔗 | TensorFlow, Keras, OpenCV

- Built a facial emotion classifier using ResNet50 trained on the FER dataset.
- Converted grayscale to RGB, normalized inputs, and applied real-time augmentation.
- Added GAP, Dense, and Softmax layers for multi-class emotion prediction.
- Used early stopping; visualized confusion matrix and accuracy/loss plots.