Sanjeev Kumar

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EDUCATION

Delhi Technological University — **Nov 2022 – June 2026**
B.Tech in Computer Science & Engineering — *New Delhi, India*

YuvaShakti Model School — **July 2021**
*12th Class - CBSE - **Percentage - 90.8%*** — *Delhi, India*

YuvaShakti Model School — **May 2019**
*10th Class - CBSE - **Percentage - 93.2%*** — *Delhi, India*

INTERNSHIP

AlgoZenith — **May 2025 – July 2025**
Teaching Assistant - Data Structures & Algorithms — *Remote*

- Resolved 500+ DSA doubts across arrays, trees, graphs, and DP, boosting student comprehension.
- Delivered detailed explanations and code reviews, raising average assignment scores by 20%.
- Mentored 50+ students in competitive programming, fostering collaboration and strategic thinking.

PROJECTS

YouTube Sentiment Analysis | *Python, LSTM, NLTK, Streamlit*

- Engineered an **LSTM-based sentiment classifier** to categorize real-world YouTube comments, handling high-variance noisy data through advanced text preprocessing including tokenization, padding, and word embeddings.
- Optimized model inference and deployed a **real-time dashboard using Streamlit**, enabling users to visualize sentiment trends across thousands of comments instantaneously.

Speech Emotion Recognition | *CNN, LSTM, Librosa, Keras*

- Architected a **CNN+LSTM hybrid deep learning model** to identify emotional states from audio, leveraging **MFCC feature extraction** to capture complex temporal and spectral patterns.
- Achieved **85% classification accuracy** on the RAVDESS dataset across 8 distinct emotion classes, validating performance through confusion matrices and precision-recall metrics.

Mental Health Detection | *BERT, PyTorch, Transformers, Scikit-learn*

- Fine-tuned a **BERT-based Transformer model** for multi-class mental health classification, achieving high sensitivity in detecting emotionally distressed user-generated content.
- Mitigated class imbalance issues using **weighted loss functions** and data augmentation, leading to a significant improvement in F1-score and model generalization.
- Utilized learning rate warm-up and AdamW optimization to stabilize training on large-scale, high-dimensionality text datasets.

Document-Based QA System | *LangChain, FAISS, OpenAI API, Python*

- Developed a **Retrieval-Augmented Generation (RAG)** pipeline using **LangChain** and **FAISS** to enable context-aware question answering from proprietary document sets.
- Implemented efficient semantic search by chunking text and generating embeddings via HuggingFace, reducing hallucination rates in LLM responses.
- Built and deployed a production-ready chatbot interface using **Streamlit**, facilitating seamless user interaction with PDF and text-based knowledge bases.

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, SQL
Web & App Development: HTML, CSS, JavaScript, React, Node.js, REST APIs
Databases: MySQL, MongoDB, PostgreSQL
ML & AI:TensorFlow, PyTorch, scikit-learn, Keras, OpenCV, NumPy, Pandas, SciPy, Matplotlib, Seaborn
GenAI & LLMs: LangChain, LangGraph, OpenAI API, Gemini API, Prompt Engineering, RAG Pipelines
Cloud & DevOps: AWS, GCP, Docker, Kubernetes, Git, CI/CD
Coursework: Machine Learning, Deep Learning, Neural Networks, OOPs, Probability & Statistics

EXTRACURRICULAR

- Solved **700+ DSA problems** on LeetCode and Codeforces with a consistent daily streak.
- Developed prototypes in **national-level hackathons** within strict 24-48 hour deadlines.
- Managed logistics for **DTU festivals**, coordinating events for 1000+ attendees.