

Mukul Mehta

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EDUCATION

Graphic Era Hill University, Haldwani Campus

Bachelor of Computer Applications (BCA), CGPA: 9.09

Aug 2023 – Jun 2026

Haldwani, India

COURSES & CERTIFICATIONS

Supervised Machine Learning (Regression & Classification) — Coursera

CS50's Introduction to Programming with Python — Harvard University

PROJECTS

Hybrid Movie Recommendation System | Python, Pandas, Scikit-learn, NLP, FastAPI, Docker, AWS

- Built a hybrid recommender combining item-based collaborative filtering with TF-IDF content similarity.
- Implemented a cascade approach where CF-generated candidates were re-ranked using NLP features.
- Developed a FastAPI-based REST service to deliver real-time top-N recommendations.
- Containerized and deployed the system using Docker on AWS for scalable inference.

Telecom Customer Churn Prediction System | Python, Scikit-learn, XGBoost, SMOTE, SHAP, Streamlit

- Developed an XGBoost-based churn classifier with preprocessing and feature engineering pipeline.
- Handled class imbalance using SMOTE and improved recall through threshold tuning.
- Integrated SHAP for model interpretability and feature impact analysis.
- Deployed an interactive Streamlit application for real-time churn prediction.

Sign Language to Speech & Text Converter | CNN, Deep Learning, OpenCV, Streamlit, FastAPI, Docker, AWS

- Built a CNN-based ASL alphabet recognition model with data augmentation and batch normalization.
- Implemented image-based inference using Streamlit and exposed predictions via a FastAPI backend.
- Containerized and deployed the application using Docker on AWS for scalable serving.
- Analyzed OpenCV-based live gesture recognition performance and domain shift limitations.
- Converted predicted gestures into text and speech for improved accessibility.

TECHNICAL SKILLS

Programming: Python, SQL

ML & DL: Scikit-learn, XGBoost, CNN, NLP, Model Evaluation

Web & Deployment: FastAPI, Streamlit, Docker, AWS (EC2)

Databases: MySQL, MongoDB

Tools: Git, GitHub

EXTRACURRICULAR ACTIVITIES & ACHIEVEMENTS

Sports Captain (Football); Secured 10th position in a 6 km Cross-Country race.

Qualified Group 1 in Army Recruitment; Former NCC Cadet (77 Battalion).

Active Member, CRC GEHU Haldwani.

LEADERSHIP & CLUBS

Lead Strategist — Tech Club: Organized hackathons and managed technical planning.

Secretary — SpeakUp Club: Led documentation, coordination, and public speaking sessions.