Umar Balak

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Education

Saraswati College Of Engineering — Navi Mumbai, India
*Bachelor of Engineering in Computer Science And Engineering (AIML) with **8.64 CGPA*** — *2021 – 2025*
*Last Sem SGPA - **9.65***

Anjuman-E-Islam Janjira High School and Jr. College of Science and Arts — Murud, Maharashtra
*Class XII with **92.50%*** — *2019 – 2021*

Skills

Programming Languages: Python, SQL

Frameworks / Databases: TensorFlow, Keras, Scikit-Learn, NumPy, Pandas, Streamlit, MySQL, SQLite

Tools / Platforms: Jupyter Notebook, Google Colab, VS Code, Git, GitHub

Projects

AI-driven Proctored Exam System

Developed a system utilizing advanced AI technologies for real-time proctored exam monitoring.

- Implemented YOLOv8 for **background monitoring** to detect unauthorized individuals, enhancing exam integrity.
- Deployed OpenCV and MediaPipe for real-time **eye gaze tracking and head movement detection**, ensuring active monitoring during assessments.
- Technologies: YOLOv8, OpenCV, MediaPipe, Django, MySQL

TinyVGG: Image Classification Model Inspired by VGG16

An optimized image classification model based on the VGG16 architecture, designed for high efficiency and performance.

- Achieved **92% classification accuracy** on the CIFAR-10 dataset by utilizing a robust VGG16-based model.
- Reduced **model size to 4MB**, optimizing it for deployment on resource-constrained devices while retaining performance.
- Technologies: TensorFlow, Keras, NumPy, CNN, CIFAR-10

CineMate: Movie Recommendation System

A movie recommendation system leveraging advanced algorithms and techniques for accuracy and user satisfaction.

- Utilized K-Nearest Neighbors and TF-IDF **algorithms** to provide users with the **top 10** tailored movie recommendations.
- Features two sections for movie: one with **8,000 top Netflix** movies and another with **75,000 top TMDB** movies.
- Technologies: KNN, TF-IDF, Python, Scikit-Learn, Pandas, Streamlit, Git

MoodMapr: Sentiment Analysis Tool

An advanced sentiment analysis tool utilizing Logistic Regression with TF-IDF vectorization for high-accuracy text categorization.

- Engineered the model to consistently achieve **90% accuracy** in categorizing text into positive or negative sentiment, optimizing classification performance.
- Successfully **analyzed over 50,000 movie reviews** and customer feedback, delivering **valuable, data-driven insights** into user emotions and sentiment trends.
- Technologies: Logistic Regression, TF-IDF, Scikit-Learn

Experience

Quasar 2.0 Hackathon - *1st Prize Winner* — March 2024
Developed an innovative AI-powered proctoring system, integrating YOLOv8 for detecting unauthorized individuals and employing OpenCV and MediaPipe for accurate eye gaze and head movement tracking to enhance exam integrity.

NASA Space App Challenge - *Winner* — October 2023
Engineered an intelligent project collaboration platform featuring a machine learning-based recommendation engine, facilitating seamless student-recruiter matchmaking via a user-friendly web interface.

Certifications

Microsoft Azure AI-900 - Microsoft — March 2023