

INTERNSHIP (21CS8PW02)

ASSIGNMENT-2

Facial Recognition System

DESCRIPTION:

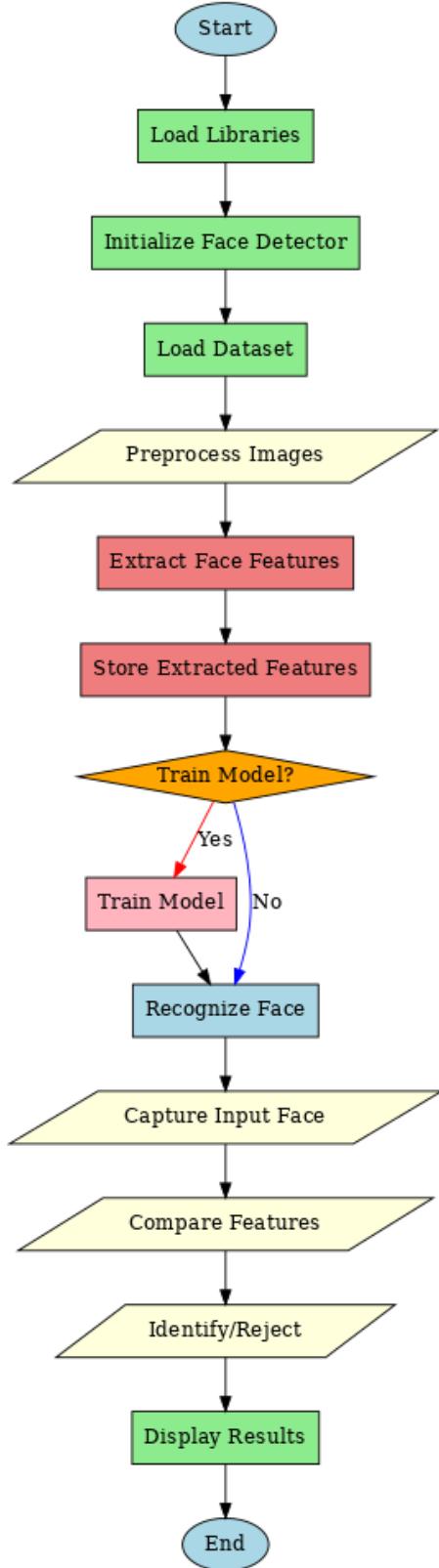
Facial Recognition:

A Facial Recognition System using OpenCV leverages computer vision techniques to identify and verify individuals based on facial features. OpenCV, an open-source library, provides powerful tools for image processing, face detection, and recognition. The system captures facial images, extracts unique features, and matches them against a stored database. It is widely used in security, authentication, and surveillance applications due to its efficiency and real-time processing capabilities, making it a reliable solution for identity verification.

Features of the Developed System:

1. Uses OpenCV for Image Processing- Utilizes OpenCV for loading, processing, and recognizing faces.
2. Face Detection with MTCNN- Employs the MTCNN (Multi-task Cascaded Convolutional Networks) for detecting faces in images.
3. Face Embedding with FaceNet- Uses the Keras-FaceNet model to generate feature embeddings for facial recognition.
4. Preprocessing Capabilities- Converts images to RGB format, resizes them to a fixed size (160x160), and normalizes pixel values.
5. Face Dataset Handling- Loads images from a directory, extracts faces, and stores them for training or recognition.
6. TensorFlow-Based Implementation- Integrates TensorFlow for deep learning-based facial recognition tasks.
7. Visualization with Matplotlib- Uses Matplotlib for displaying images and analysis.
8. Efficient and Scalable- Supports training on multiple images and real-time recognition.

WORKFLOW:

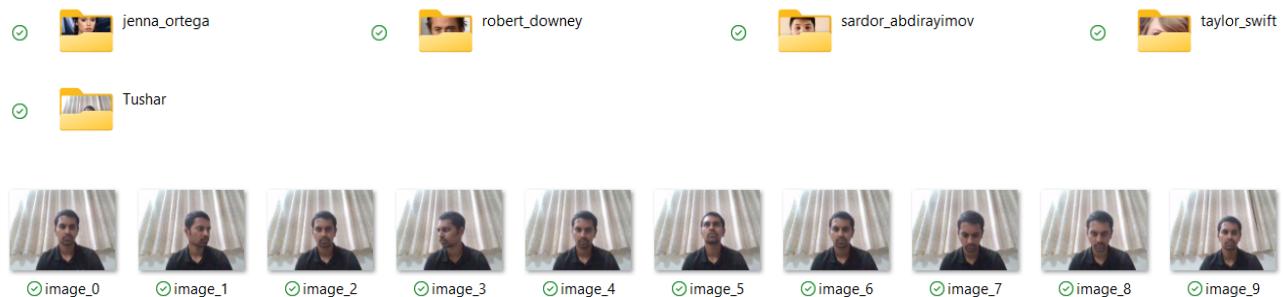


NAME: Tushar Sanjeev Shinde
USN: 21BTRCL114

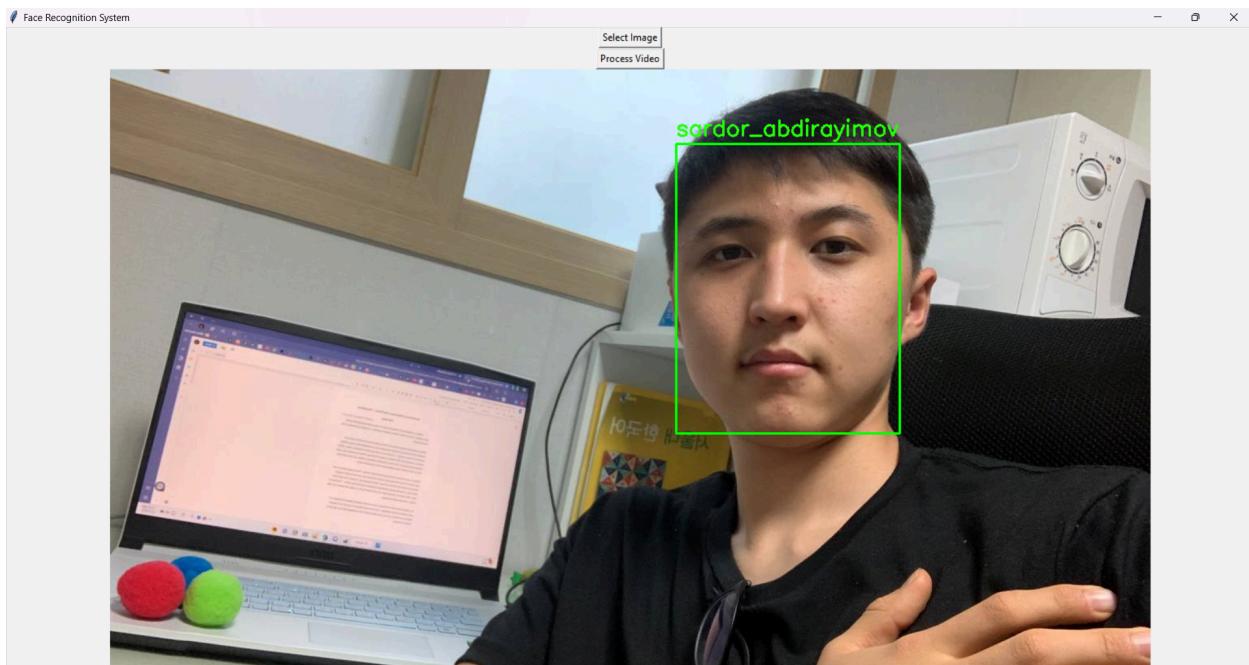
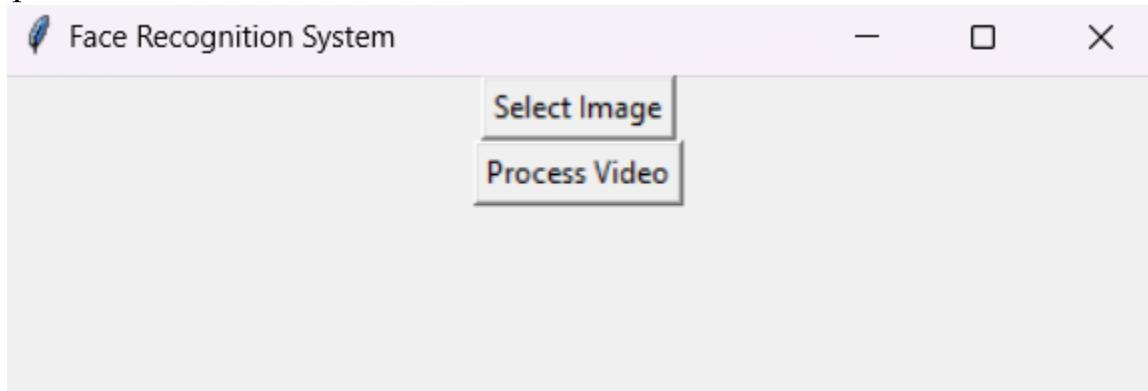
SECTION: AIML-B
DATE: 23/02/2025

OUTPUT SCREENSHOTS:

Dataset:



Output:



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