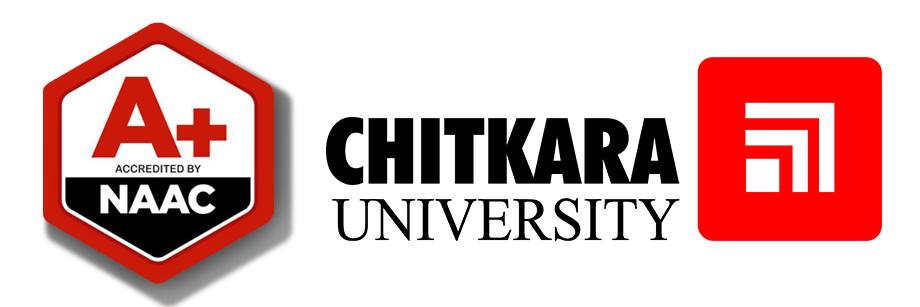
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**Artificial Intelligence and Machine Learning**

Project Report

Semester-IV (Batch-2022)

**Celebrity Face Recognizer**

**Supervised By: Submitted By:**

Shalini Kumari Gursimran Kaur 2210990350 (G-30)

Himanshu Kohli 2210990404 (G-30)

Kunisha Dhir 2210990528 (G-30)

Pinak Dhir 2210990650 (G-30)

**Department of Computer Science and Engineering**

**Chitkara University Institute of Engineering & Technology, Chitkara University, Punjab**

**Abstract**

1.The project's goal is to use machine learning techniques to create a reliable system for detecting celebrity faces.

2.To guarantee data quality and consistency, the dataset will undergo preprocessing that includes managing missing values, encoding features, and normalising numerical data.

3.The accuracy with which several machine learning algorithms—including Support Vector Machines (SVM), Random Forest, Logistic Regression —can distinguish celebrity faces will be assessed.

4.Metrics like as accuracy, precision, recall, and F1-score will be used to evaluate each model's performance in order to determine the best method for detecting celebrity faces.

5.The goal of the project is to develop a dependable and effective method for identifying famous faces in pictures or videos. This technology may find use in social media analysis, entertainment, and security.

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Introduction:

1.For applications like social media analysis, entertainment business, and security systems, accurate celebrity face prediction in photos or videos is crucial.

2.Accurately identifying celebrity faces is difficult because of differences in image quality, lighting, stance, and facial expressions.

3.Compared to more conventional approaches, machine learning algorithms have the ability to analyze picture data and extract characteristics that may be used to recognize famous faces.

4.In order to create a reliable celebrity face identification system that will be useful for social media, entertainment, and security, this project will use machine learning techniques.

**Problem Definition:**

1.It is difficult to reliably identify celebrity faces in photos or videos because of differences in lighting, picture quality, and facial features.

2.Developing an efficient face identification system requires determining the most important facial traits or patterns that set celebrity faces apart from non-celebrity faces.

3.To improve user experiences and functioning, security systems, entertainment apps, and social media platforms need trustworthy and effective celebrity face identification models.

4.It is possible to evaluate picture data, identify significant characteristics, and create precise models for celebrity face identification by utilizing machine learning techniques.

**Requirements:**

1.Access to extensive datasets containing images of celebrities and non-celebrities, with annotations or labels indicating the presence of celebrity faces.

2.Conduct thorough data preprocessing, including image resizing, normalization, and augmentation, to ensure the quality and consistency of input data for training.

3.Identify and select relevant facial features or patterns that distinguish celebrity faces from non-celebrities, using techniques like facial landmark detection or deep learning feature extraction.

4.Evaluate and choose appropriate machine learning algorithms, such as transfer learning models, considering their ability to recognize complex patterns in images.

5.Assess the performance of the selected model using evaluation metrics like precision, recall, F1-score, and accuracy to ensure its effectiveness in celebrity face detection.

6.Deploy the trained model into a production environment for real-time face detection and implement monitoring mechanisms to track its performance. Regularly update and retrain the model with new data to adapt to changes in facial appearances and image characteristics.

**Proposed Design:**

1.Gather a varied collection of photos with labels or annotations identifying the presence of famous faces among non-celebrities.

2.To increase the generalization and robustness of the model, preprocess the picture data by resizing, normalizing, and enhancing the photos.

3.To differentiate celebrity faces from non-celebrities, extract significant facial characteristics using methods like SVM, transfer learning, or facial landmark identification.

4.Utilising the previously processed picture data, train the chosen model and adjust its hyper-parameters to increase the accuracy of face identification.

5.Assess the efficacy of the trained model in identifying celebrities' faces by evaluating its performance using assessment measures including accuracy, precision, recall, and F1-score.

**Results:**

1.To find out how well the celebrity face detection model recognizes celebrity faces, use evaluation metrics to assess the model's performance and accuracy.

2.To determine which method is most successful, compare the results of several machine learning algorithms and methodologies for celebrity face identification.

3.Showcase the usefulness of the face detection model in practical applications such as social networking platforms, entertainment industries, and security systems.

4.Evaluate the correctness of the model with new data and changing picture features to see how stable and consistent its performance is over time.

5.Examine how using the celebrity face detection model could affect security protocols, provide new features in a variety of apps, and improve user experiences.