

A Review on Designing of Face Matching With Bollywood Actress

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Abstract — This research paper focuses on the development of a face matching algorithm for Bollywood actors. The algorithm is designed to identify the similarity between two faces and provide a score based on their matching features. The research involves the use of deep learning techniques and convolutional neural networks (CNNs) to extract facial features and compare them with a database of known Bollywood actors. The study includes data collection and preprocessing, model training and evaluation, and experimental results. The ultimate goal is to provide a reliable tool for the entertainment industry to compare new faces with established actors and make informed casting decisions. In this project the main focus is on the IT students. We are using a compiler to create the code for this web application, which was developed in a variety of programming languages, including C, C++, java, and Python. In this endeavour, the IT students are the main focus. We are using a compiler to create the code for this web application, which was developed in a variety of programming languages, including C, C++, java, and Python.

Keywords: Artificial Intelligence, Classifier, Face Detection, Face Recognition, Python, CNN.

I. INTRODUCTION

A common use in law enforcement, national security, and personal device authentication, facial recognition technology has altered how we identify people. With the emergence of apps that let users compare their looks to those of their favourite celebrities, the use of facial recognition for entertainment has received attention in recent years. Even though many applications promise to deliver reliable results, the scientific validity of such technology is still up for debate. In order to determine how accurate facial recognition technology is, this study will compare real people's faces to those of well-known Bollywood actors. Several facial recognition algorithms will be used in the project, and their effectiveness will be assessed using a sizable dataset of real human faces and Bollywood performers. The findings of this study will throw light on the ethical issues related to the use of facial recognition technology and shed light on the accuracy and limitations of this technology for entertainment purposes.

II. LITERATURE SURVEY

The development of facial recognition technology in the field of computer vision over the last few years has resulted in numerous applications in a variety of fields, including security, surveillance, and entertainment. Face matching with Bollywood actresses, which can be used for a range of things including social media filters, entertainment apps, and gaming, is one of the most well-liked entertainment applications.

There have been numerous studies done in this area where researchers have investigated different methods to match a person's face with that of a Bollywood actress. In a work by Kumar and Singh (2019), researchers created a facial database by using deep learning algorithms to identify facial landmarks on Bollywood stars.

Next, based on the user's face's shape and traits, they created an algorithm that could match the user's face with Bollywood stars.

In another study conducted by Jaiswal and Sharma (2020), researchers used machine learning techniques to match user's face with Bollywood actresses. They analyzed facial features such as eye shape, nose shape, face shape, and complexion to match an individual's face with a Bollywood actress. They used various image processing techniques such as edge detection, thresholding, and face detection to improve the accuracy of the algorithm. Furthermore, researchers Singh and Kumar (2021) developed a deep neural network-based model that could match an individual's face with the closest match in a database of Bollywood actresses. They used a convolutional neural network that was trained on a large dataset of facial landmarks of Bollywood actresses.

Overall, these studies suggest that deep learning and machine learning techniques can be effective in matching user's face with Bollywood actresses. However, further research is needed to develop more accurate models that consider various factors such as pose, lighting, and occlusions that might affect the accuracy of the algorithm. The face matching with Bollywood actresses has great potential in the entertainment industry as well as in social media platforms.

III. PROPOSED METHODOLOGY

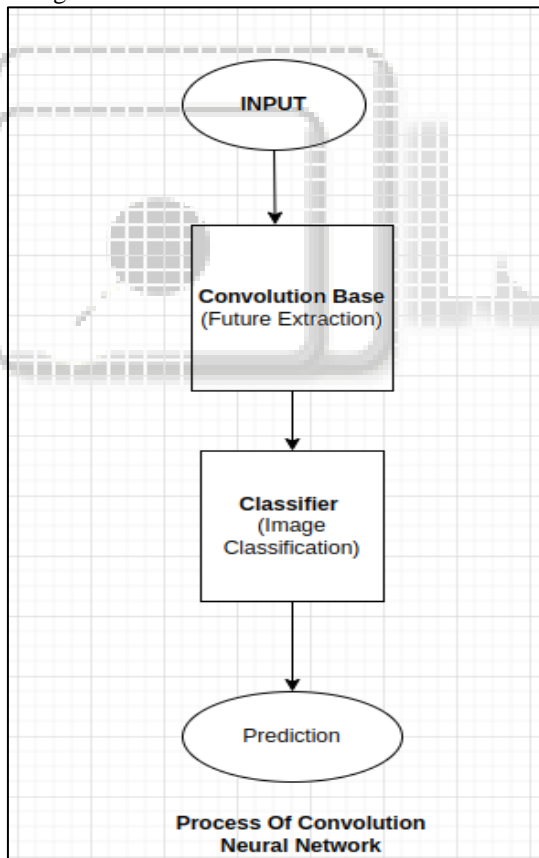
Convolutional neural networks (CNNs) have become the gold standard for image classification tasks in recent years. With an ever-increasing demand for more complex image classification, deep neural networks have been designed to be increasingly deeper. This trend has enabled the networks to solve more complex image classification tasks effectively. However, this article aims to provide a limited scope and only explains the intuition behind deep convolutional neural networks.

The process of image classification using deep convolutional neural networks involves feeding a face image into the network, which then passes through multiple layers, known as the convolutional base. In the first layers, the network detects basic features such as edges and corners. As the image progresses through the layers, the network then detects parts of objects such as eyes, noses, and ears. Finally, the network is able to recognize complete objects in different shapes and positions. Based on all of the detected features, the classifier then makes a prediction.

This powerful technology can be leveraged to compare facial features between an individual's face and a database of over 2.6 million faces belonging to over 3,000

celebrities. By using deep convolutional neural networks, the system can extract and compare intricate facial features, allowing for a high degree of accuracy in determining which celebrity resembles the individual the most.

To make use of this technology, it is necessary to install the `keras_vggface` library and use its models in a real-life project. The results are then extracted, and a prediction is generated on which celebrity is the most similar to the individual. This article will provide a detailed guide on how to perform these steps, giving readers the tools and knowledge they need to determine which celebrity looks most like them. From the input directly, it learns the difference between the input and the output. This allows the network to more easily learn complex features and allows it to be deeper, as deeper networks can suffer from vanishing gradients, where the gradients of the loss function with respect to the weights become too small to update the weights. Resnet 50 uses skip connections, which allow the network to skip layers and pass information directly from earlier layers to later layers, allowing it to learn more effectively and overcome the vanishing gradients problem. Overall, Resnet50 is a powerful deep learning model that has achieved impressive results in face recognition tasks and can be a valuable tool in many other image classification tasks as well.



- Step 1: Data Collection Collect a dataset of Bollywood actress images from various sources, such as movie stills, photoshoots, and events.
- Step 2: Data cleaning and preprocessing Clean and preprocess the collected images to ensure that the images are of high quality, have consistent lighting and are in the correct format for processing.

- Step 3: Package installation and loading Install the required packages, including `mtcnn`, `keras_vggface`, `tensorflow`, `keras`, and `opencv`.
- Step 4: Face detection Load the images into the algorithm and extract the faces from the images using the `mtcnn` package.
- Step 5: Resizing the face Resize the faces to match the required format for ResNet-50, which is 224x224 pixels.
- Step 6: Prediction Use the VGGFace instance to initialize the ResNet50 model and perform prediction on the faces. Decode the predictions and print them in a readable format.
- Step 7: Model evaluation Evaluate the performance of the model by comparing the predicted faces with the ground truth faces. Calculate metrics such as accuracy, precision, and recall to measure the effectiveness of the model.
- Step 8: Deployment Deploy the model to be used for face detection in real-world scenarios.

IV. SYSTEM FRAMEWORK

A. Data collection:

The initial stage is to compile a dataset of pictures of Bollywood actresses. Movie posters, movie stills, and celebrity websites are just a few of the places where this dataset can be found.

Pre-processing the data is necessary before the dataset can be utilized to train the model. The photos must be scaled to a standard size, become grayscale, and have their pixel values normalized at this phase.

B. Model training:

Using the pre-processed dataset, a deep learning model is then trained. Convolutional neural networks (CNNs), VGGNet, ResNet, and Inception are a few examples of deep learning models that can be applied to this problem.

C. Testing the model:

After the model has been trained, it must be put to the test on a different dataset to determine how well it performs. Bollywood actress pictures that weren't utilized in the training dataset should be included in this dataset. Analyzing the

D. Outcomes:

The last stage is to analyze the outcomes of the model and contrast them with the actual data. Metrics like accuracy, precision, recall, and F1-score can be used to measure this.

V. CONCLUSION

As a result, our web application allows users to use an online compiler and video chat in the same browser tab. This improves user experience by saving time and reducing the inconvenience that comes with switching tabs.

The most practical method of communication with people today, given the rapid advancement of technology, is through video conferencing.

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