

Face Recognition from video using Threshold based Clustering

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Abstract: Video processing has gained significant attention due to the rapid growth in video feed collected from a variety of domains. Face recognition and summary generation is gaining attention in the branch of video data processing. The recognition includes face identification from video frames and face authentication. The face authentication is nothing but labeling the faces. Face recognition strategies used in image processing techniques cannot be directly applied to video processing due to bulk data. The video processing techniques face multiple problems such as pose variation, expression variation, illumination variation, camera angles, etc. A lot of research work is done for face authentication in terms of accuracy and efficiency improvement. The second important aspect is the video summarization. Very few works have been done on the video summarization due to its complexity, computational overhead, and lack of appropriate training data.

In some of the existing work analyzing celebrity video for finding association in name node or face node of video dataset using graphical representation need script or dynamic caption details As well as there can be multiple faces of same person per frame so using K- Means clustering further for recognition purpose needs cluster count initially considering total person in the video. The proposed system works on video face recognition and summary generation. The system automatically identifies the front and profile faces of users. The similar faces are grouped together using threshold based a fixed-width clustering approach and only top k faces are used for authentication. This improves system efficiency. After face authentication, the occurrence count of each user is extracted and a visual co-occurrence graph is generated as a video summarization. The system is tested on the video dataset of multi persons occurring in different videos. Total 20 videos containing multiple person in one frame are consider for training and testing purpose. To evaluate the accuracy of recognition. 80% of faces are correctly identified and authenticated from the video.