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Feature Extraction and Person Identification using Digital Image Processing

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Abstract— feature extraction is most famous research area of images processing as it is a unique technology to represent a face. Face identification has a important role in technical field of security purpose. Person face identification is an important field for verification purpose. This paper provide complete body work of different features extraction techniques and their used in object recognization and classification and detail result have been discussed.

Keywords-component; formatting; style; styling; insert (key words)

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I. INTRODUCTION

Facial Identification or face identification as it is often referred to as, desperate characteristics of a person, face image input through a camera . It measures all facial structure , distance between eyes , mouth , nose and Jew edges this measurement are retained in a data base and used as a comparison when a user stand before a camera . One of the important positive aspects of facial Identification is that it is not-interfering. Verification and Identification can be accomplished from achieving from three feet away or more , without requiring user to wait for long periods of time do anything more than look at the camera .Automatic person identification date back to the year 1960 pioneer such as woody Bledsoe. Helen Chan wolf and Charles bison introduced their work toworld in 1994 and 1965 .bledsoe, together with Helen Chan and Charles bisson had worked on computer to identify the person. After him the work carry head Peter hart at the Stanford research instituted the results given by computer where terrific when support with a gallery of images for identification in allover 1997.an other approach by chritoph von dear malsborand student of a lot reputed university got together to design a system which was more excellent than previous one. The system design was rebust and could identify person from photography which didn't offer a clear view of the facial images .This growth in electronics transaction results in great demand for fast and accurate user identification and authentication.Access codes for building , banks, accounts and computer system oftenuse PINs for Identificatiom and security clearance.These system have contributed in catching terrist and other types of introduce viacyber or in person . A lot of methods are used for face identification such as knowledge based method, feature invariant, template maching, appearance based method are used for identification purpose.

II. FEATURE EXTRACTION

Feature extraction is an important components to identify person system . Plotting the image pixels into the features space is known as features extraction. In machine learning, pattern recognition and in image processing, feature extraction starts from an initial set of measured data and builds derived values (features) intended to be informative and non-redundant, facilitating the subsequent learning and generalization steps, and in some cases leading to better human interpretations. Feature extraction is related to dimensionality reduction.

In machine learning , person identification and image processing . Features extraction start from set of measured data and build derived value (features) intended to be informative and non - redundant , facilitating the subsequent getting and generalization steps and in some cases leading to perfect human interpretation features extraction is related to dimensionity reduction.

When the input data to an algorithm is too large to be processed and it is suspected to be redundant (e.g. the same measurement in both feet and meters, or the repetitiveness of images presented as pixels), then it can be transformed into a reduced set of features (also named a feature vector). Determining a subset of the initial features is called feature selection.[1] The selected features are expected to contain the relevant information from the input data, so that the desired

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task can be performed by using this reduced representation instead of the complete initial data**.**

III. PROPOSED SYSTEM

The input to a face identification system is always an image stream. The output is an identification or verification of the subject or subject that look in the image. The face identification system process can be identify using three steps as shown in fig.

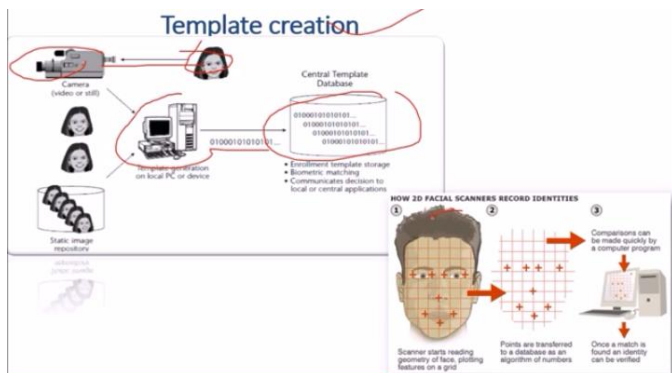Face detection → Feature extraction → Face identication
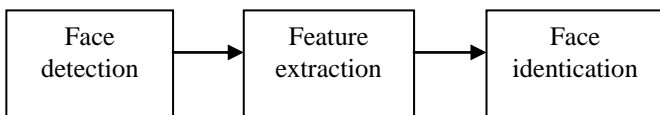
In the face detection step face are extracted from scenes through system positively identify the image .the next step feature extraction involves obtaining relevant facialfeatures from the data. The feature make it number of face regions, such as variation, angles or measures, which can be human relevant(e.g.eye, nose, mouth)or not. This phase other application like facial feature capture or emotion identification.

Finally the system does identify the face. in an identification task, the system would report an identify from a database.

Template Creation:-

In template creation, the camera through capture the image of face and its pass towards the system and system convert the face image into digital form and store on template .The realize process is to compare with face nodal Such as nose, eyes, mouth this point are match to the store database and finally detect the image.

Face detection

The method used for face identification can be classified in following ways,

A) Knowledge based method – They are rule based method that encodes our knowledge of human faces.

B) Feature invariant method – This method are algorithms that find invariant feature of face despite it angle and position.

C) Template matching method- This algorithm compare input image with stored patterns of faces or feature.

D) Appearance based method- A template matching method whose pattern data based is learnt for from set of training image.
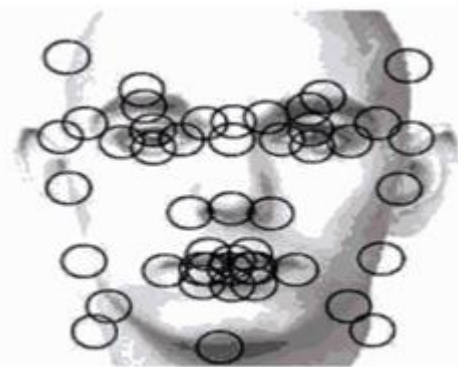
Result

We have discussed method for face identification such as,

A) Template Matching Method

B) Feature Invariant Method

IV. CONCLUSION

In this paper, we have discussed different face detection and feature extraction technique, feature extraction is an important part of face identification because it forms the basis classification of different faces. This various methods are used for easily identify the image.

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