A NOVEL HEURISTIC ANALYSIS OF FACE IDENTIFICATION AMIT TWINS

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Abstract

Face recognition is a technique used to classify or substantiate the person based on digital image from only one of its kind face humans. The biometrics and face recognition is based an individual and unique person identification. This work fully based on compare the one image with other person image for identification of the human face. This is the one of the way to do the comparison by selected facial features from the image and a facial database. It provides security systems and compared to other existing biometric system such as fingerprint or eye iris recognition systems. But due to the above method the main difficult problem is to identify twins. The proposed algorithm is solved to all related problems. It is used different facial recognition algorithms. In facial recognition algorithms should be able to identify the similar looking individuals or able to separate the identical twins using face recognition with accuracy classification. The extracted features were classified using SVM classifier. The input person is first detected to be twins or not based on classification method. If the persons were identified to be twins then they were identified to be same person or different. If the persons were identified to be twins then the persons were identified separately. The performance of the process is measured.

Keywords—Biometrics, Extracted features, Face recognition, SVM classifier.

I. PREAMBLE

Previously many manual experiments were performed to identify twins and also to recognize their features with difference, and many more systems were existed to show differences in twins by using finger prints, voice and iris as part of pattern recognition. In existing system many processes are used for twin's identification like finger print, voice and iris recognition. The process of finger print identification is used to identify unique person. This technique used to find scrutinize image occupied from the people image and compare with database for identification of twins. The iris detects the similar technique to finger prints identification. Each and every person image have unique iris so we can make out a people image through iris appreciation technique. This work detect the voice recognition is based on only one of its kind people image voice harmonizing and identifies the correct person. Iris appreciation has drawbacks such as mismatching image, slow process of identification and easy to hack, long time taken for identification. The existing methods are not suitable identification of twins processing methods and efficient process. The problem exists for misidentification of twins with existing algorithms, not retrieve original image scan, that some agencies issuing driver licenses have implemented special process of procedures to budding matches against twins. Indistinguishable twins correspond to the most unpleasant case development for face recognition where two separate subjects have comparable manifestation. It is most important to check the test existing face related algorithms on the very hardest recognition phases. So the new system is proposed to identify twins accurately. The proposed technique is one of the most acceptable biometrics, and it has been the most common method of recognition that human use in their visual interactions and accurate. The previous technique have problem with not authentication systems based on fingerprint, voice, iris and the most recent genetic material structure has been the problem of data acquisition. Face appreciation is significant not only due to the competence of its lot of budding applications in explore fields but also due to the competence of its solution which would help in solving other categorization problems such as object recognition and accurate.

II. MATERIALS AND METHODS

Data Collection

Datas are collected from various environment and various object sources. All data's are stored in database. The information is fully systematic approach to gathering and measuring from a variety of sources.

Existing Work

The previous algorithm manipulate the biometrics of identical twins is affected by many factors, some of those such as facial characteristics are still awfully analogous face identification. Some impossible to tell apart twins share not only comparable facial features but also the same signature. Each and every person not easily identify the twins because sometimes face and activities different terms but really twins status. This scenario not easily identified for existing algorithm. So we can phase the very confusion over their identities has made it difficult. Identical twins partake in commercial scams such as deceptive indemnity reimbursement. For the illumination covariate laboratory analysis subjects had people images taken both within under studio lighting and out-of-doors with not limited lighting. In this instance, uncontrolled lighting Can range anywhere from direct sunlight to the amount of light visible through the clouds on a rainy day. Exertion on distinguishing impossible to tell not together twins based on other biometrics as well as palm print, fingerprint, iris, and speech recognition. Sometimes not identical twins commits a

serious crime, their unclear identities cause confusion and uncertainty in risk trials. The existing algorithms mostly evaluated in lighting of covariates and research the concepts in effects of illumination and expression on differentiating identical twins.

Proposed Work

This proposed algorithm system introduce the face image is taken as input. This technique used to extract features from the images and matching the twins in all scenario level. All data's are collected from various environment and different sources. The attribute values are stored in a database. An image to be compared is accepted from user. For this image also the list of features as per input image are prepared. After comparing the feature values for both the images, it is decided that whether the image in question is of a twin or an image of the same person. This classification is done using the SVM classifier. Finally the performance of the process is measured and analyzed. This technique used to identical twins commits a serious crime; their clear identities cause not confusion and certainty in risk trials.
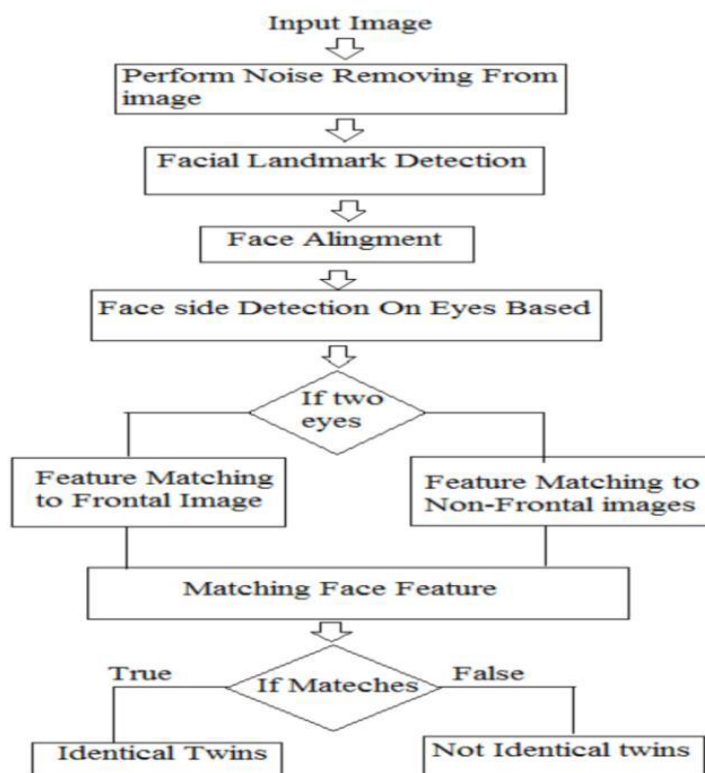

Figure 1: Process flow of Detection of Identical twins

III. METHODOLOGY

Algorithm for Support Vector Machine (SVM)
Compute dataset d(l; k)
for l = 0,1,.., L and k = 1, l+1,.., K do; If l = k, Generate the first level approximation dataset for all images from training and validation set.else, generate dataset1 for all images from training and validation set.
Apply SVM method on the training data.
Taking columns 4-7;dataset = dataset[4:7];Selecting columns 4-7
dataset$dataset1 = factor(dataset$dataset1, levels = c(0, 1))
Splitting the dataset
 index <- 1:nrow(dataset)
 testindex <- dataset1(index, trunc(length(index)/2))
 testset <- dataset[testindex,]
 trainset <- dataset1[-testindex,]
split = sampledataset.split(dataset$dataset1, SplitRatio = 0.85)
training_set = subset(dataset, split == TRUE); test_set = subset(dataset, split == FALSE)
Fitting SVM to the training set
 data(dataset, package="match")
Predicting the Test set results
 svm.model1 <- svm(Type ~ ., data = trainset, cost = 97, gamma = 1)
 svm.pred <- predict(svm.model, testset[,-7])
Making the Confusion Matrix
conmat = table(test_set[, 5], y_pred)
Visualizing the Training set and Plotting the training data set results
X1 = seq(min(set[, 1]) - 1, max(set[, 1]) + 1, by = 0.01);
X2 = seq(min(set[, 2]) - 1, max(set[, 2]) + 1, by = 0.01)

contour(X1, X2, matrix(as.numeric1(y_grid), length1(X1), length2(X2)), add = **TRUE**)
points(grid_set, pch = '.', col = ifelse(y_grid == 1, 'True', 'False'))
points(set, pch = 25, bg = ifelse(set[, 3] == 1, 'green', 'red'))

IV. RESULTS AND DISCUSSION

This works are followed the support vector machine (SVM) classification using various object sources. The object sources are stored in a database. The classifications are evaluated and accurate using various sources.

This technique used to a grouping of all the classes in two disjoint groups of classes. This classification alliance is then used to train a SVM classifier in the root node of the decision tree using the samples object of the first group object as optimistic examples and the samples of the second cluster negative examples. These modules from the first clustering group are being allocated to first left sub tree while the classes of second clustering group are being allocated to right second sub tree. This process continues recursively until there is only one class per group which declared a leaf in the decision tree.

TABLE 1
Existing and Proposed Technique

Process Methods	Existing Algorithm Result	Proposed Algorithm Result
Input Images	85	88
Perform Noise Removing from Images	77	79
Face Land marking and Alignment	69	73
Face Side Detection on Eyes Based	82	89
Get Feature Distance	72	81
Scale Invariant Feature Transforms	89	93

In this above table process of system refers to false reject rate valid match pairs that are incorrectly regarded as two different object subjects in this system, the matching value zero but in existing system show the error rate. Error rate varies with respective to the different condition. Same way false accept rate non-match pairs that are incorrectly identified as being the same person object system matching values minus one. The existing system show the error rate and not proper accurate. The proposed techniques show the efficient results compare the existing technique.
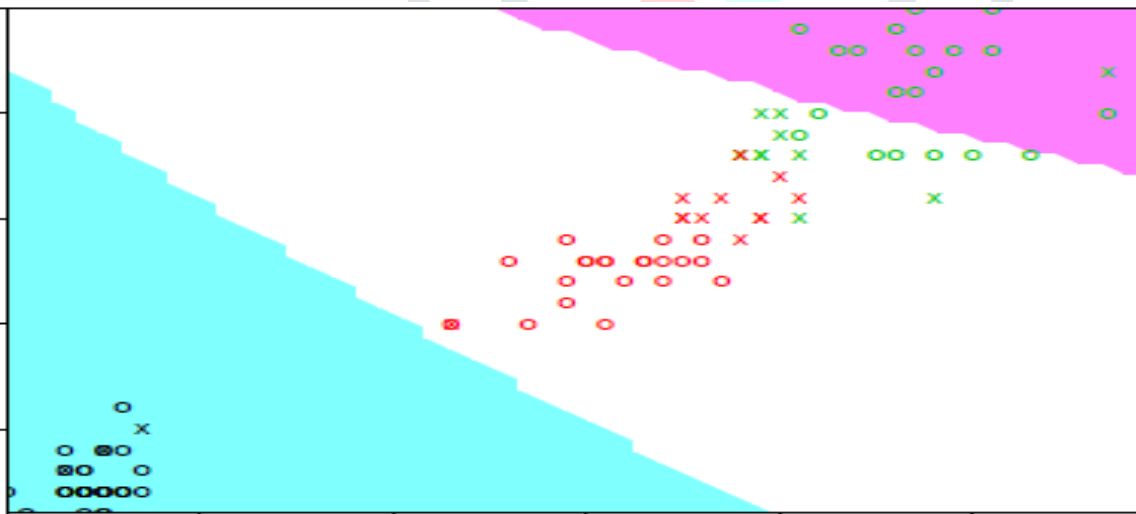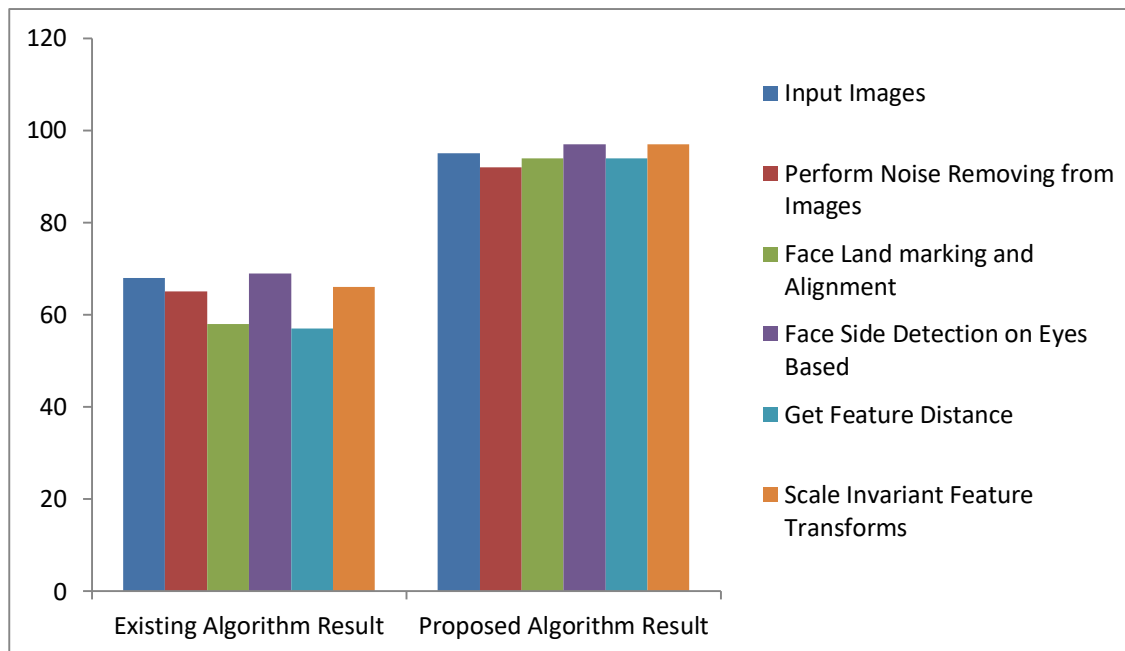
Figure 2: SVM Visualizing the Training set and Plot the training data set results

Since the Support vectors are shown as 'X', true classes are highlighted through symbol color, predicted class regions are visualized using colored background. Some result, a hyper-plane has been found in the Training set result and verified to be the best one in the Test set result for identical the data. The correct data (matching) are displayed green colours else not correct data (not matched) are displayed red colours.

V. CONCLUSION

This work concluded popular technique in flexible modelling in identification twin's process. This technique very used for identification of twins with all different point of view and even these techniques can fabricate the base for identification of twins by using patterns. Furthermore, the match the data parameters is crucial for obtaining good results, which practically means that an widespread search must be conducted on the parameter space before results can be reliable, and this often complicates the task. Finally, the current implementation is optimized for support vector machine function only, which clearly might be suboptimal for your data.

VI. REFERENCES

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