FINDING MISSING PERSON USING ML, AI

Neha Gholape *1, Ashish Gour*2, Shivam Mourya*3

*1,2,3*Engineering, Information Technology, VPPCOE & VA, Mumbai, Maharashtra, India

ABSTRACT

This paper deals with the literature survey of the existing papers. In this paper various research papers are analyzed. The author’s approach, implementation techniques, merits, demerits, future scope, conclusion of each paper is analyzed. The papers studied are also based on the finding missing persons. This paper is basically based on the ongoing research and by the end of this paper a better way to find the missing persons will be discovered and the drawbacks of the previous research papers will be addressed.

Keywords: Artificial Intelligence, KNN Algorithm, Support Vector Machine, Random Forest, Open CV, Dlib, Haar Cascade Classifier, Face Recognition, Face Modeling, Face Detection

I. INTRODUCTION

In India 174+ children’s and 250+ persons are missing every day, and half of them are untraced so by this project we think the tracking rate will increase.

Children’s or any person missing that is major issue and we as a society have to resolve it. For that purpose we decided to make system which will help to find missing persons by their face recognition using Machine Learning, Deep Learning and Artificial Intelligence.

II. METHODOLOGY

Research Paper Studied

After study of 8 IEEE papers we written review paper. All the papers are related to our project, all the papers are based on matching the faces of persons.

In all the papers we analyzed that some common machine learning algorithms and technologies are used like KNN algorithm, Support Vector Machine, Random Forest, Open CV, Dlib, Haar Cascade Classifier, Face Recognition, Face Modeling, and Face Detection which gives different accuracies.

III. ANALYSIS

Table below shows the comparison of 8 IEEE papers

<table>
<thead>
<tr>
<th>Year</th>
<th>Detail</th>
<th>Algorithm/Technique</th>
<th>Features</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>FAREC - CNN Based Efficient Face Recognition Technique using Dlib</td>
<td>CNN, DATASET , Dlib algorithm</td>
<td>The Dataset of FAREC are have very large storage capacity. Dlib algorithm (open source library) used in this paper gives the best solution for face recognition.</td>
<td>C++ language used, 96 percent accuracy.</td>
</tr>
<tr>
<td>2017</td>
<td>Face Modeling Process Based on Dlib</td>
<td>Random Forest , Training Process , Tree of the Regression</td>
<td>Classification done by random forest algorithm gives better result of classification like 95% accurate, and by training process all work goes stepwise.</td>
<td>Random Forest Algorithm quite time consuming process because it is unstable (means small change in data leads to change in structure)</td>
</tr>
<tr>
<td>Year</td>
<td>Title</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Review and Comparison of Face Detection Algorithms</td>
<td>Viola Jones Face detection Algorithms, Successive Mean Quantization Transform (SMQT) Features and Sparse Network of Winnows (SNOW) Classifier Method, Neural Network-Based Face Detection, Support Vector Machines:</td>
<td>For the comparison of the specified face detection algorithms, precision and recall is calculated using the DetEval Software. Viola Jones Face detection Algorithm give competitive object detection rates. Every time the kernel is selected it is tested for the classification problem and it may not yield to good results as produced by the sample set.</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Face Detection and Tracking Using OpenCV</td>
<td>Haar Cascades, Cam Shift Algorithm, OpenCV</td>
<td>Haar Cascades is very efficient in performance and is popularly used. Initially, Haar Cascades was time consuming, but after the modified version it is not that time consuming. Cam Shift Algorithm is very expensive to buy. Finding via motion is very time-consuming.</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>Face Detection and Tagging using Deep Learning</td>
<td>Face Detection, Face Tagging</td>
<td>The proposed work will be extended to use it with any CCTV footage system for identifying people in case of theft. An accuracy of 85% is achieved for tagging the faces which are successfully detected.</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>A Robust Method for Face Recognition and Face Emotion Detection System using Support Vector Machines</td>
<td>Open CV, Machine Learning, Principle component analysis (PCA), linear discriminant analysis (LDA), Fisherface, active shape model (ASM), Dlib, Scikit</td>
<td>Give result comparatively fast. Haar Cascades is very efficient in performance and is popularly used.</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Face Modeling Process Based on Dlib</td>
<td>Random Forest Tree of the Regression HELEN, AFW Dataset.</td>
<td>Random forest give most accurate result on any dataset. Making the decision on regression is much easier than most other methods.</td>
<td></td>
</tr>
</tbody>
</table>
### IV. RESULTS AND DISCUSSION

**a) Motivation**

We found that all papers which we studied are having some different issues regarding the pixel size and motion of image but we are going to develop a system which will give better result. So our aim is to make a dynamic system which will be having the prediction outcome probability higher even if change in image. We found that using KNN algorithm is easy to match picture with high accuracy.

**b) Tentative System Architecture**

The whole picture is divided into numbers of pieces and they have the different values of pixels. These pixel values are compared with the threshold level and provides the decisions.

### V. CONCLUSION

Today's advancement is just the beginning in the onset of face detection technology there are many other applications where face detection can be introduced.

So we found we use dataset of “HaarCascade_frontalface_default.xml” in our project. Which gives better results and easily available also. We found that using OpenCV with KNN is giving better results. Thus our project will improve the existing system of finding a person.

### VI. REFERENCES


