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MISSING CHILD IDENTIFICATION AND ADOPTION OF THE CHILD FROM THE REMAINING CHILDREN DATABASE AFTER A TIME PERIOD

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ABSTRACT
In India, countless children are reported missing every year. Among the missing child cases, a large percentage of children remain untraced. The enhancement of missing child identification is the adoption of the child from the remaining children database after a period Child welfare Centre is responsible for checking the parent's authenticity. In Adoption customers, after logging in to the parents, registered parents have to fill in the same child details that were filled in the registration form of the parents. The Convolutional Neural Network (CNN), a highly effective deep learning technique for image based applications is adopted here for face recognition. Face descriptors are extracted from the images using a pre-trained CNN model VGG-Face deep architecture. The images using a pre-trained CNN model VGG-Face deep architecture.

INTRODUCTION
Children are the greatest asset of each nation. The future of any country depends upon the right upbringing of its children. India is the second populous country in the world and children represent a significant percentage of total population. But unfortunately a large number of children go missing every year in India due to various reasons including abduction or kidnapping, run-away children, trafficked children and lost children. So even if a child is found, it is difficult to identify him/her from the reported missing cases. A framework and methodology for developing an assistive tool for tracing missing child is described in this project.

PROBLEM STATEMENT
Mostly missing child cases are reported to the police. For various reasons, the child missing from one region may be found in another region or another state. So even if a child is found, it is difficult to identify them from the reported missing cases. No Framework to upload and provide child adoption**.** An idea for maintaining a virtual space is proposed, such that the recent photographs of children given by parents at the time of reporting missing cases is saved in a repository. The public is given provision to voluntarily take photographs of children in suspected situations and uploaded in that portal.

OBJECTIVE
The usage of Deep Learning algorithm has reduced the need for human labour, such as manual feature xtraction and data reconstruction for classification purposes. Basically CNN architecture consists of computational layers for feature extraction and a classifier layer at the final stage. The VGG-face CNN model employs the softmax

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activation function for labeled class prediction, suggesting the class each image belongs to. The softmax in the CNN layers is replaced with a multi class SVM trained with feature vector array from each image.

EXISTING SYSTEM

Mostly missing child cases are reported to the police. For various reasons, the child missing from one region may be found in another region or another state. So even if a child is found, it is difficult to identify them from the reported missing cases. No Framework to upload and provide child adoption**.** A framework and methodology for developing an assistive tool for tracing missing child is described in this project.

An idea for maintaining a virtual space is proposed, such that the recent photographs of children given by parents at the time of reporting missing cases is saved in a repository. The public is given provision to voluntarily take photographs of children in suspected situations and uploaded in that portal. Automatic searching of this photo among the missing child case images will be provided in the application. This supports the police officials to locate the child anywhere in India.

PROPOSED SYSTEM

A new ML Framework which provides Search of Missing Children. The framework provides the adoption of children to needy persons. The framework provides interaction between parents and missing children. It consists of a national portal storing details of a missing child along with the photo. Whenever a child missing is reported, along with the FIR, the concerned officer uploads the missing child's photo into the portal. The public can search for any matching child in the database for the images with them. The system will prompt the most matching cases. Once the matching is found, the officer can get the child's details. Here we propose a methodology for missing child identification which combines facial feature extraction based on deep learning and matching based on KNN. The proposed system utilizes face recognition for missing child identification. This is to help authorities and parents in missing child investigation.

In this project, location of the person updating the photo will also be automatically recorded. Whenever public uploads photo of a suspected child, the system generates template vector of the facial features from the uploaded photo. If a match is found in the repository, the system displays the most matched photo and pushes a message to the concerned Officer portal or SMSs the alert message of matching child.

SYSTEM ARCHITECTURE

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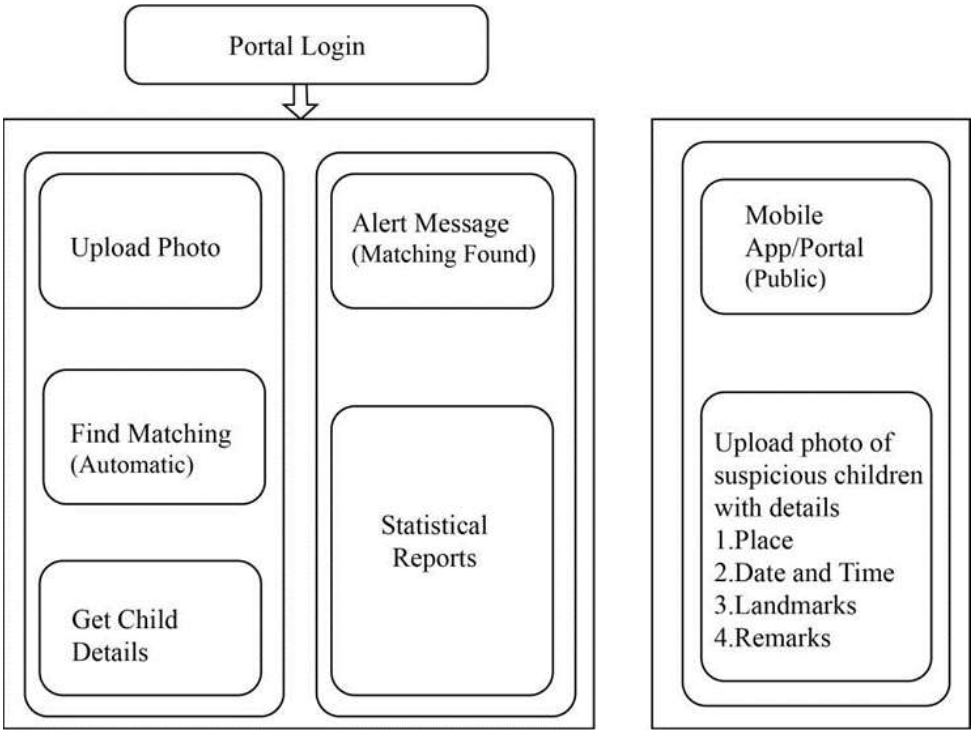

System design involves the architectural and detailed design of the system. Architectural design involves identifying software components, decomposing them into processing modules and conceptual data structures, and specifying the interconnections among components

MODULES

Preprocessing

Preprocessing input raw image in the context of face recognition involves acquiring the face region and standardizing images in a format compatible with the CNN architecture employed. Each CNN has a different input size requirement. The photographs of missing child acquired by a digital camera or mobile phone are taken and categorized into separate cases for creating the database of face recognition system. The face region in each image is identified and cropped for getting the input face images.

Upload Photo

It consists of a national portal for storing details of missing child along with the photo. Whenever a child missing is reported, along with the FIR, the concerned officer uploads the photo of the missing child into the portal. The public can upload photo of any suspicious child at any time into the portal with details like place, time, landmarks and remarks. The photo uploaded by the users will be automatically compared with photos of the registered missing children and if a matching photo with sufficient score is found, then an alert email will be sent to the concerned officer. The message will also be visible in the message box of the concerned officer login screen.

Search

Whenever users uploads photo of a suspected child, the system generates template vector of the facial features from the uploaded photo. If a matching is found in the repository, the system displays the most matched photo and pushes a message to the concerned Officer portal or Email the alert message of matching child. Similarly the Officer can check for any matching with the database at any time using the proposed system.

RESULTS

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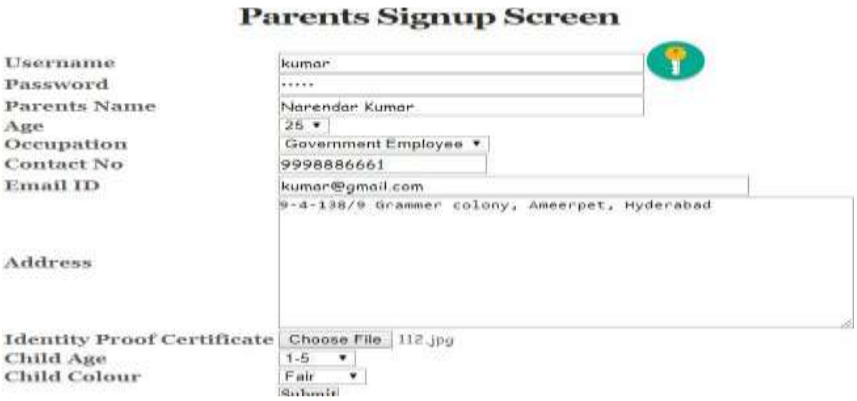
In the above screen, you can click on the 'Adoption Rules' link to get the page below



In the above screen, enter the required child details and then press the 'Submit' button to get below screen.

In the above screen, in the blue text, we can see the signup process completed and now click on the 'Parent Login' link to get below screen.

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In the above screen, the parent is logged in, and after login, they will get the below screen

In the above screen, parents now click on the 'Resubmit Child Details' link to get the below screen.

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In the above screen, select the child details given at registration time and apply the match pattern; if the pattern matches, you will get the below screen.

In the above screen, a parent can view all child's details and then click on the ‘Click Here’ link to adopt the child to adopt a child and get the below certificate.

The above screen displays parent details with the adopted child's name, logout, and login as welfare.

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In the above screen, you can login as welfare by giving your username and password as ‘welfare,’ and after login will get the below screen.

In the above screen welfare, people can click on the ‘View Adoption Details’ link to view all parent's details who adopted a child.

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The above screen welfare shows parent details with contact no and email and child names who adopted the child.

CONCLUSION

In conclusion, A missing child identification system is proposed, combining the powerful CNN-based deep learning approach for feature extraction and support vector machine classifier to classify different child categories. This system is evaluated with the deep learning model, trained with feature representations of children's faces. By discarding the softmax of the VGG-Face model and extracting CNN image features to train a multi-class SVM, it was possible to achieve superior performance. The performance of the proposed system is tested using photographs of children with different lighting conditions, noises, and images at different ages. The classification achieved a higher accuracy of 99.41%, showing that the proposed face recognition methodology could be used for the reliable identification of missing children. In the missing child project, the student was asked to implement RESNET 50 and VGG 16 and compare their accuracy with CNN.

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