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LITERATURE SURVEY ON RECENT TRENDS IN CLOTH PATTERN AND CLASSIFICATION FOR BLIND PEOPLE USING DEEP LEARNING

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ABSTRACT

In this paper discussed about the advancement of technology for blind people to identify the cloth pattern and cloth classification using digitized computer systems based on machine learning process between blind people and computers. The present research work is going on deep learning with human computer interactions for blind people to recognize the different cloth patterns and its classification for their convenient. The present work explained about the possibility and difficulties of research for the impaired people using deep learning using python implementation. Neural Network algorithm creates the grid of segmented image and making the feature learning for each blocks to identify the objects that is matched to the training feature database. In that, the Convolutional Neural Network enhances the feature learning model than other traditional learning methods. In this proposed work, we focus on the improvement in the feature learning that can be achieved by integrating the Deep Super Learning method with Convolutional Neural Network (DSL-CNN). In this, the DSL algorithm enhances the learning model by extracting the best combination between the neurons to get the clear features of an object. This form of feature learning and detection method improves the accuracy in better rate than other traditional detection methods. The proposed method can be implemented in the python scripting and validate the performance by using the parameters like, sensitivity, specificity, precision, recall, true positive rate, false positive rate and accuracy with the reference of Ground truth of database.

Keywords: - deep learning, Human computer interaction, cloth patterns, visually impaired people, color.

1.INTRODUCTION

Human computer interaction they observe the ways in which humans interact with computers and design technologies that let humans with computers in novel ways. As a

field of research, Human Computer Interaction is situated at the intersection of computer science, behavioral sciences, design, media studies, and several other fields of study [1]. Humans interact with

computers in many ways; and the interface between humans and the computers they use is crucial to facilitating this interaction. Desktop applications, internet browsers, handheld computers, and computer kiosks make use of the prevalent graphical user interfaces (GUI) of today. Most impaired people don't have access to extra special teaching aids they need to learn. Based on data from the World Health Organization (WHO)[1][2][4], there are more than 3million people across the globe who are blind, over 15 million are in India .Our system mainly says about how the human computer interaction can be done with the help of sensor and like other devices helps the visually impaired people. The present implementations focus on these kinds of fields where such as pattern recognition in the form of clothes how a impaired person can come to know about the pattern and color of that clothes. The present research work can handle clothes with complex designs and notice clothing patterns into four categories (plaid, striped, pattern less, horizontal, vertical and irregular etc.). the proposed method is able to identify almost all normal colors[5][1][6][4][13]: red, orange, yellow, green, cyan, blue, purple, pink, black, grey, and white. For the large intra class variations. etc.

Although many methods have been developed for texture matching and colour detection in the computer vision and image processing research, currently there is no device that can effectively supply matching choices for blind people. In this paper, we develop a computer vision-based approach

to match a pair of images of clothes for both pattern and colour. The image pair is considered from the data set. To configure and control the system, users can simply speak out the commands to switch on/off the system, execute corresponding functions, and adjust the volume of audio outputs. Our algorithm can detect: 1) Colours of the clothes; 2) whether the clothes have pattern or have homogeneous colour3) whether the colours match for a pair of images.

2. PROBLEM STATEMENT

Computer aided object tracking system improves the automation process in the real-time work. Most of the object detection and tracking system helps people to guide who are visually impaired. To extract and detect the clear view of the object image segmentation and the classification process are the methods used to track objects from the source of image or video. There are several methods to implement the detection of objects in the image. Most of them used machine learning techniques to analyse the image and tract the object present in the image / video. In machine learning techniques, there are two models of class labels to represent the classified output. In that, one is binary classification and other one is multi-label classification model. Since, the multi-label classification models are commonly used to detect the more number of objects present in the source image. Since most of the classification methods struggles in the feature learning process that needs huge amount of database to classify the actual object with good rate of accuracy.

3. LITERATURE SURVEY

Xuet al. in this paper explained about Texture based representations and its methods for benefit from the invariance of fractal measurements to geometric transformations [1]. For example, multi-fractal spectrum (MFS) proposed combined fractal dimensions of pixel sets grouped by density functions and orientation templates.

Lazebnik et al. developed a texture based representation method on affine-invariant detectors (Harris and Laplacian) and descriptors (RIFT and SPIN). Zhang et al. also combined scale invariant feature transform (SIFT) and SPIN for texture classification. [3] Liu et al. built a clothing assistant system for specific occasions (e.g., wedding or dating).

[4] Hidayati et al. implemented a method for different classification of upper-wear clothes and lower wear clothes. The two used systems are developed without accepting key factors visually impaired people. [5] Yuan et al. designed a system to assist blind people to match different clothes and its regular patterns from a pair of clothing images.

Sameer Antania, Rangachar Kasturia, Ramesh Jainb:- in this work the authors used for the content based both information like video and image from different media that was captured from the source was developed many scientists. In this work the development was mainly based on selected methods that give permission to access video data and image data. The used methods had different roots in recognition of

different patterns. The methods are used to determine the similarity in the visual information content extracted from low level features.

Faiz M. Hasanuzzaman, Xiaodong Yang, and YingLi Tian:- both authors had proposed a component-based recognition device for particular cloth recognition using different methods of SURF Patches with correct sizes of ground truth images for each class of particular images are selected regions for comparing with query images. The present methods of SURF mainly explain effectiveness in handling background of the images, and its rotation, scaling and light of the brightness of the image.

[9], [10] In this paper the developed work was new implementation for the extraction of images in the techniques based on different models to real image textural information and properties applied mathematically and structural methods which has two matrices like Spatial Gray Tone Dependence: Co-occurrence Matrix and also study with the future of texture based on different images and its classification by considering the difference of the input original image and the process of segmented image. Segmentation is a method that the image is divided into number of sub images for to get the information about image. In this work also considered Supervised and unsupervised Texture classification is additionally projected for classifying the mosaic textures in a very graphical method.

In this work the information is presented in the form of text for to identify the different recognized images based on surface textures under the limited range of transformation methods which was considered view point that changes and considered non-rigid deformation. The future extraction of the image at the different stages from a sparse of Harris and *Laplacian* regions identified in the image.

4. OBJECTIVES

1. To Develop Computer based system for detecting the cloth pattern and color.
2. To Evaluate image comprising technique to analysis the cloth pattern and their color.
3. The proposed method can be implement in the python scripting and validate the performance by using the parameters like, sensitivity, specificity, precision, recall, true positive rate, false positive rate and accuracy with the reference of Ground truth of database

5. METHODOLOGY

The proposed work explained for the present implementation, the database contains number of different color images and its patterns images. The first step is to preprocess the image for to identify the contained information in the image. The second step is used to for the grid formation required in order to identify the proper angles of information. Further step is used to create the database for feature extraction of all the selected images.

Based on future extraction apply the integrating Deep Super Learning method with Convolutional Neural Network (DSP-CNN) for identification of different colors

and it's all possible patterns in the image. To use for further implementation we need the python scripting and validate the performance by using the parameters like, sensitivity, specificity, precision, recall, true positive rate, false positive rate and accuracy with the reference of Ground truth of database.

In the present work the algorithm, we present the implementation of this convolutional layer.

The generalization to subsequent convolution layer is simply made by selecting the getting feature connections as new input to the next convolution layer.

In a multi-label arrangements, to run multiple CSVMs depending on the number of classifications and its objects. Each CSVM will apply a set of convolutions on the selected image under deep learning analysis. Then each convolution layer is followed by a spatial reduction layer. This reduction layer is similar to the spatial pooling layer in standard CNNs. It is commonly used to reduce the spatial size of the feature maps by choosing the most useful selected features for the next layers. It takes small blocks from the resulting features maps and sub-samples them to produce a single output from each block.

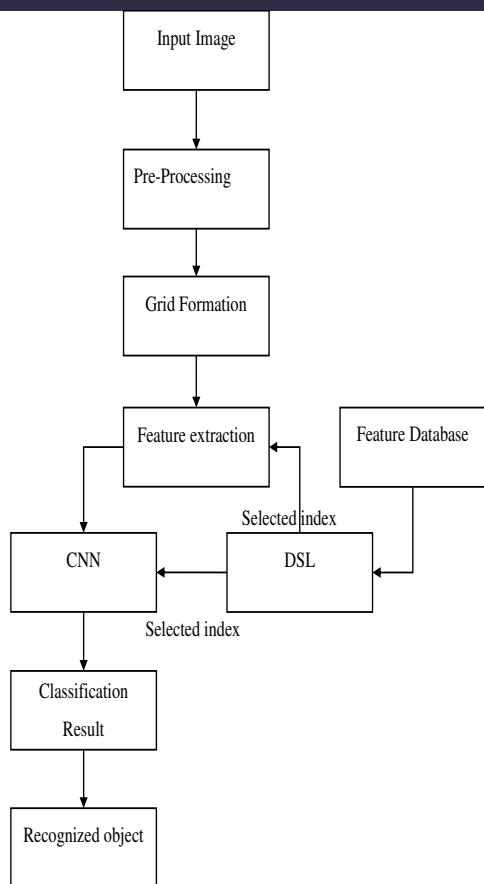


Figure 1: process of proposed methodology

6. EXPECTED RESULTS AND DISCUSSION

In this paper the proposed methods which gives better results to identify the cloth patterns and classification using Deep Super Learning methodwith Convolutional Neural Network (DSP-CNN) for impaired people. In this work python language playing very important role for the identification of different cloth pattern and its color accurately. The expected results which givedetection of different colors and patterns from the voice will present and speak about color and its pattern.

7. DATASETS

This dataset includes 10000 images of eight different typical clothing pattern designs: plaid, striped, pattern less, and irregular with regular with different size of the images in each category. Every one of the photographed electronic device’s displays has its own illumination; the selection of the devices was based on the types of displays commonly found in daily life.

8. CONCLUSION

There is more number of cloths its patterns nowadays. Selecting different clothes with selected patterns are many challenging and difficulties for visually impaired people. In currentresearch work we suggested deep learning approach with human interaction a system that give accuracy information for impaired people for selected clothes easily. The suggested system can identify successfully any type of colors and different patterns using Deep Super Learning methodwith Convolutional Neural Network (DSP-CNN). In the future work the expected results and evolution of performance will be help to the blind people.

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