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Efficient Costume Decoration Acceptance For Optically Defective Humanity



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ABSTRACT

In this paper, we aim at a practical system, magic closet,for automatic occasion-oriented clothing recommendation.Given a user-input occasion, e.g., wedding, shopping or dating,magic closet intelligently suggests the most suitableclothing from the user's own clothing photo album, or automaticallypairs the user-specified reference clothing (upperbodyor lower-body) with the most suitable one from online shops.Choosing clothes with complex patterns and colors isa challenging task for visually impaired people. Automatic clothingpattern recognition is also a challenging research problem dueto rotation, scaling, illumination, and especially large intraclasspattern variations. We have developed a camera-based prototypesystem that recognizes clothing patterns in four categories (plaid,striped, patternless, and irregular) and identifies 11 clothing colors.The system integrates a camera, a microphone, a computer,and a Bluetooth earpiece for audio description of clothing patternsand colors. A camera mounted upon a pair of sunglasses is usedto capture clothing images. The clothing patterns and colors aredescribed to blind users verbally. This system can be controlledby speech input through microphone. To recognize clothing patterns,we propose a novelRadon Signature descriptor and a schemato extract statistical properties from wavelet subbands to captureglobal features of clothing patterns. More specifically,the clothing attributes are treated as latent variables inour proposed latent Support Vector Machine (SVM) basedrecommendation model. The wearing properly criterion isdescribed in the model through a feature-occasion potentialand an attribute-occasion potential, while the wearingaesthetically criterion is expressed by an attribute-attributepotential.The prototypewas also used by ten visually impaired participants. Most thoughtsuch a system would support more independence in their daily lifebut they also made suggestions for improvements.

INTRODUCTION

Image processing is any form of signal processing for which the input is an image, such as a photograph or video frame. The output of image processing may be either an image or a set of characteristics or parameters related to the image. Most image-processing techniques involve treating the image as a two-dimensional signal and applying standard signal-processing techniques to it. Image processing usually refers to digital image processing, but optical and analog image processing also are possible. Image processing is closely related to computer graphics and computer vision. Image processing is a method to convert an image into digital form and perform some operations on it, in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image, like video frame or photograph and output may be image or characteristics associated with that image. Usually Image Processing system includes treating images as two dimensional signals while applying already set signal processing methods to them.

EXISTING SYSTEM

Clothing images present large intraclass variations, whichresult in the major challenge for clothing pattern recognition.However, in a global perspective, the directionality of clothingpatterns is more consistent across different categories and canbe used as an important property to distinguish different clothingpatterns. As shown in Fig. 8, the clothing patterns of plaidand striped are both anisotropic. In contrast, the clothing patternsin the categories of patternless and irregular are isotropic.To make use of this difference of directionality, we propose anovel descriptor, i.e., the Radon Signature, to characterize thedirectionality feature of clothing patterns.Assistive systems are being developed to improve the lifequality and safety for those with special needs, including indoor navigationand way finding, display reading, banknote recognition,rehabilitation, etc. Liu et al. built a clothing recommendationsystem for specific occasions (e.g., wedding or dating).Hidayati et al proposed a method for genre classificationof upper-wear clothes. The two systems are both designed withoutconsidering key factors for blind users. Yuan et al.developed a system to assist blind people to match clothes froma pair of clothing images. This system can provide a user withthe information about whether or not the clothing patterns andcolors match. However, this system is not able to automaticallyrecognize clothing patterns.

DISADVANTAGES

- This system is not capable to automatically perceive clothing plan.
- To retrieve clothing from network shopping websites to match with a user undefined clothing and also not suitable for a specified time.
- Classical texture search methods cannot perform the same level of efficiency in the context of clothing pattern acceptance.
- Structure can provide a user with the data about whether or not the clothing arrangements and color event.
- Loss of in fluctuation to general geometric conversion, these approaches cannot completely represent texture images

PROPOSED SYSTEM

Scale Invariant Feature Transform (SIFT) features are features extracted from images tohelp in reliable matching between different views of the same object. The extractedfeatures are invariant to scale and orientation, and are highly distinctive of the image.They are extracted in four steps. The first step computes the locations of potential interestpoints in the image by detecting the maxima and minima of a set of Difference ofGaussian (DoG) filters applied at different scales all over the image. Then, these locationsare refined by discarding points of low contrast. An orientation is then assignedto each key point based on local image features. Finally, a local feature descriptor iscomputed at each key point. This descriptor is based on the local image gradient, transformedaccording to the orientation of the key point to provide orientation invariance.Every feature is a vector of dimension 128 distinctively identifying the neighborhoodaround the key point.

ADVANTAGES

- Automatically make costume patterns and colors may increase their life condition.
- Introduce a camcorder-based system to help visually harmed people to recognize arrangement and colors.
- To evaluate the efficiency of the proposed approach, used the CCNY costume dataset.
- The prospective color description achieves 99% matching accuracy in the analysis.
- This research demonstrates another merit of our approach that it is adept to achieve a fascinating result by using much less drill data.

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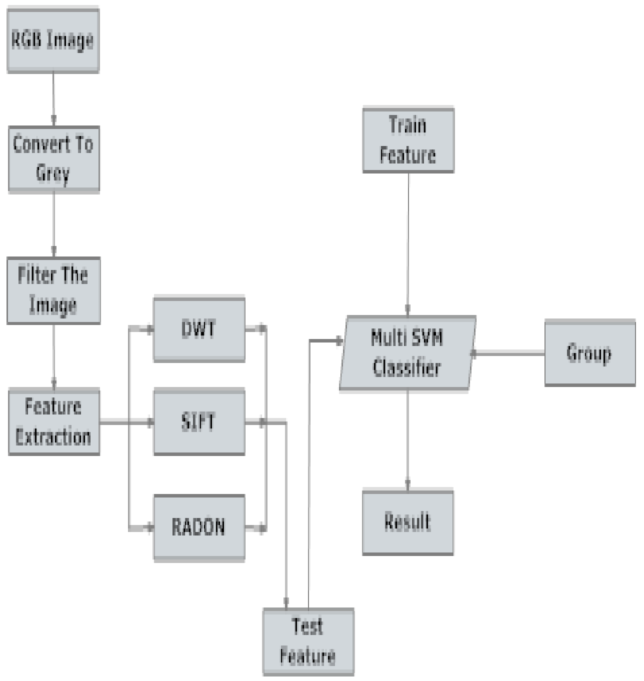
SYSTEM ARCHITECTURE



INPUT IMAGE:

Get a RGB image as input process. It stores in any image format.Cloth pattern is used in the input image or grey image.Doing preprocess and filtering are the main action perform in to the image.

PREPROCESS:

Convert the RGB image in gray scale image. Then use Gaussian filter to remove the noises. In electronics and signal processing, a Gaussian filter is a filter whose impulse response is a Gaussian function (or an approximation to it). Gaussian filters have the properties of having no overshoot to a step function input while minimizing the rise and fall time. This behavior is closely connected to the fact that the Gaussian filter has the minimum possible group delay. It is considered the ideal time domain filter, just as the sinc is the ideal frequency domain filter. These properties are important in areas such as oscilloscopes and digital telecommunication systems. Mathematically, a Gaussian filter modifies the input signal by convolution with a Gaussian function; this transformation is also known as the Weierstrass transform.

Filtering involves convolution. The filter function is said to be the kernel of an integral transform. The Gaussian kernel is continuous. Most commonly, the discrete equivalent is the sampled Gaussian kernel that is produced by sampling points from the continuous Gaussian. An alternate method is to use the discrete Gaussian kernel which has superior characteristics for some purposes. Unlike the sampled Gaussian kernel, the discrete Gaussian kernel is the solution to the discrete diffusion equation.

FEATURE EXTRACTION:

Three types of algorithm is used to extract the feature RADON Feature, Discrete Wavelet Transformer (DWT), SIFT Feature.

We propose an approach based on SIFT features for face recognition. The SIFT features are extracted from all the faces in the database. Then, given a new face image, the features extracted from that face are compared against the features from each face in the database. The face in the database with the largest number of matching points is considered the nearest face, and is used for the classification of the new face. A feature is considered matched with another feature when the distance to that feature is less than a specific fraction of the distance to the next nearest feature. This guarantees that we reduce the number of false matches. This is because in case of a false match, there will be a number of other near features with close distances, due to the high dimensionality of the features. On the other hand, in case of a correct match, it is unlikely to find another feature that is too close due to the highly distinctive nature of SIFT features.

Discrete wavelet transform, a mathematical procedure in numerical analysis and functional analysisIn numerical analysis and functional analysis, a discrete wavelet transform (DWT) is any wavelet transform for which the wavelets are discretely sampled. As with other wavelet transforms, a key advantage it has over Fourier transforms is temporal resolution: it captures both frequency and location information (location in time).

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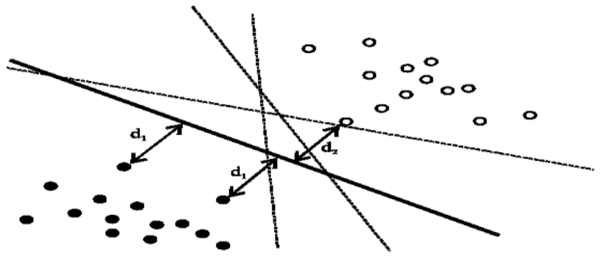
Expression for hyper plane

w.x+b = 0

x – Set of training vectors

w – vectors perpendicular to the separating hyper plane

b – offset parameter which allows the increase of the margin

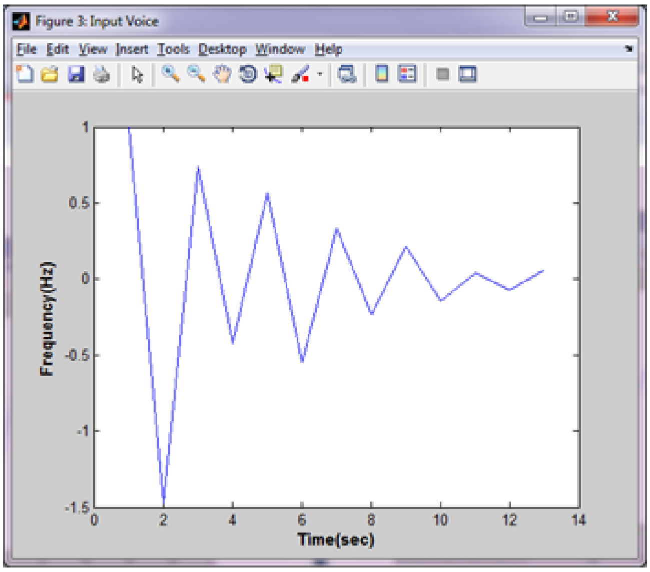


Margin is d1+d2

Kernel function is used when decision function is not a linear function of the data and the data will be mapped from the input space through a nonlinear transformation rather than fitting non-linear curves to the vector space to separate the data. With an optimal kernel function implemented in SVM model, the classification task is able to scale high dimensional data relatively well, tradeoff between classifier complexity and classification error can be controlled explicitly.

SIMULATION RESULTS

Input curve:

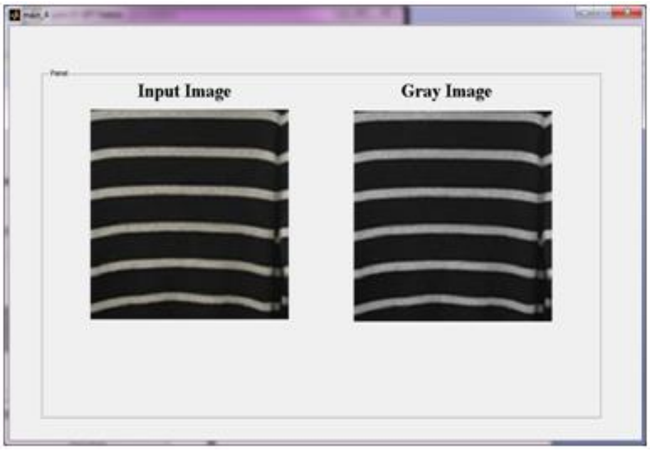


Input curve

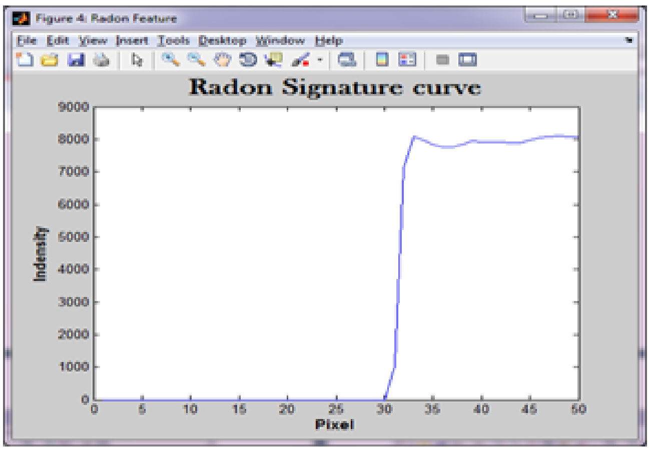
Take the any one image automatically in Test image folder

Input Image folder changed as:

Conversion of Gray image:



Random Image curve:



Random Image curve

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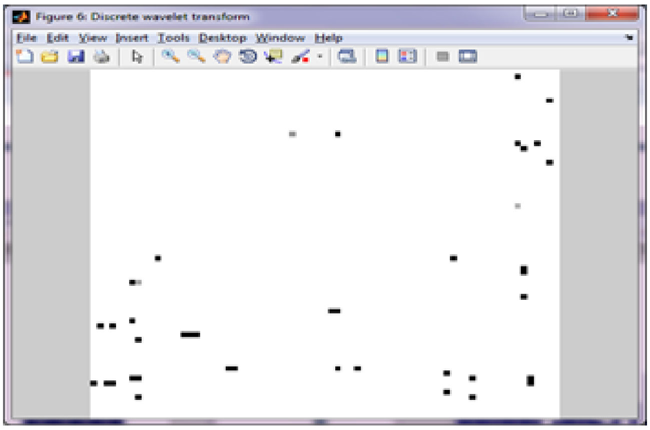
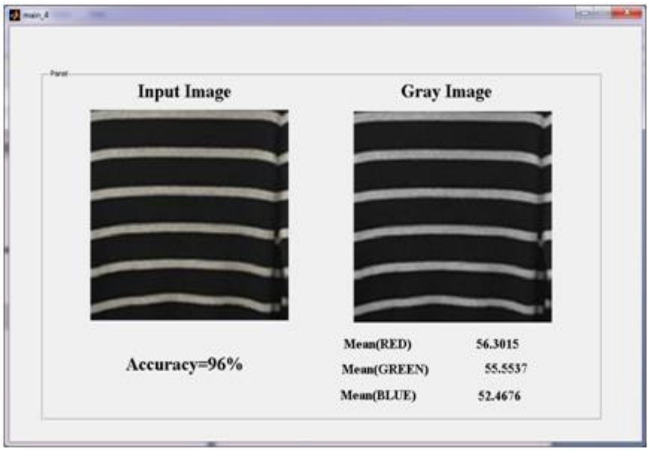
Discrete Wavelet Transform:



Discrete Wavelet Transform

Output:



Final output

CONCLUSION

Note that the performance of the proposed model heavilydepends on the human detection accuracy. Limited bythe current performance of human detector in handling posevariance, some clothing in the user's clothing photo albummay be misdetected. This issue can be further alleviatedalong with the development of state-of-the-art detection methods.In this work, we mainly focus on mining general rulesand therefore we collect clothing from various.This research enriches the study of texture analysis, and leads to improvements over existing methods in handling complex clothing patterns with large intra class variations. The method also provides new functions to improve the life quality for blind and visually impaired people.

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