Combinatorial Various Classification Proceedings for Hyper spectral Evidence Awareness

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Abstract

In land cover classification, Hyperspectral image investigation have been used in the field of remote sensing. Hyperspectral means hundreds of bands In this classification of hyperspectral we aim to produce a thematic map is more accurate by combinatorial classification methods. A hyperspectral data is a raw data which was undetermined. The feature representation is based on two learning algorithms (Support Vector Machine (SVM) and Artificial Neural Network (ANN)) were used to perform the combination function. In this work the main aim to produce the thematic map for survey analysis which is easy to the employee can work anywhere at any time. In this method the genetic algorithm(GA) is also used to produce more accuracy in thematic map. Here the dotnet painting tool is used for color representation. Our proposal was able to reduce the time complexity, no need for assigning weights and overcome the difficulties of the usual combination rules.
Keywords: Genetic Algorithm, Hyperspectral Image, Support Vector Machine, Feature Extraction, Pixel Representation, Land Cover Classification

I. INTRODUCTION

Image processing is a method of converting an image into digital form and performs some operations on it, to get accurate image .in imaging science , image processing is any form of signal processing for which input is an image, such as the output of image processing may be either an image or characteristics related to image. The current image capture in remote sensing of the earth by satellite based sensors in digital form. In the image the pixels are arranged in row and column. Image processing operations for hyperspectral images can be either scalar image oriented or vector image oriented[6]. The basic level of image processing enhances an image. At high level automatically detect the objects in the image and classifying them .

Remote sensing images are retrieved by multispectral sensors. The small number of channels that characterizes multispectral sensors may be enough among various land cover classifications such as ,forestry ,water ,crops, urban areas etc.

The bias capability is limited when the different types of same species are acknowledged. Hyperspectral sensors can be used to deal with this problem. These sensors are identified by very high spectral declaration that usually results hundreds of channels. Recent advances in remote sensing used kernel based learning algorithms. The support vector machines shown to suitable for hyperspectral image classifications .The SVM is effective method which dealing with high dimensional data.The Artificial Neural Network is the method in which the computing system are made up of interconnected processing elements using this ANN algorithm neural path of the object are identified. The Genetic algorithm used to group the similar objects

II. RELATED WORKS

A. Farid Melgani, And Lorenzo Bruzzone, Introduces

The classification Hyperspectral Remote Sensing of Images With Support Vector Machines they addressed the problem of the classification of hyperspectral remote sensing data using support vector machines.1) SVMs are more effective than other conventional classifiers in terms of classification accurateness, computational time, and strength to parameter setting; 2) SVMs look more effective than the traditional pattern recognition approach[3], which is based on the combination of a feature

extraction/selection procedure 3)SVMs illustrate low sensitivity to the Hughes occurrence, resulting in an excellent approach to avoid the usual time-consuming phase required by any feature-reduction method.

Hayder Abd Al-Razzaq Abd This study includes the processing of hyperspectral data to order the study area using SVM and MCL algorithm under the classification based on pixel to discover the thematic map of land cover and observe which type of classification is better[4]. And the results exposed that the accuracy assessment of SVM is better than of MLC classification and the overall accuracy for both SVM and MLC is examined by Maximum possibility were 98.23%, 90.48% in that order the land cover and land use mapping even the area is very small and there is a good variation .

Bor-Chen Kuo, Cheng-Hsuan Li, and Jinn-Min Yang introduces Kernel Nonparametric Weighted Feature Extraction for Hyperspectral Image Classification (KNWFE). With KNWFE, more kernels are used to obtain enhanced classification results[2] . KNWFE can have the uppermost classification accuracy beneath three training-sample-size but time consumed when the training sample size is large[5].

III. PROPOSED WORK

The system propose that the combining various classification method scheduled for hyperspectral data awareness. Using the hyperspectral data the sensors are identified by very high spectral declaration that usually results hundreds of channels. The svm algorithm used to find out the vertices of object in the selected area which is accurate method   for all classification method. The svm algorithm uses the hyperspectral image classification method.

The proposed system scheduled for hyperspectral data awareness. This model supports ANN algorithm which is the extension of multi layer perceptron neural network(MLP).The ANN algorithm is designed for find out the neural path of the object. However the identify the object neural path is more accurate by ANN. In this algorithm input layer which is interconnected with all nodes. The input layer communicate with one or more hidden layer. The hidden layer linked to the output layer

In this system the pixel wise representation is used. The pixel is a single dot in a graphical image. In the display screen the picture is divided into thousands or millions of pixels and arranged in row and column. The similar pixels called object. The similar objects in area are called class-cluster. Using the enetic algorithm the similar objects are identified and which is used to generate the statistical report. The genetic algorithm is the default algorithm used in dot net painting for graph.

The classification task becomes more complex with large amounts of data and thereby decreasing the accuracy. Another issue is the problem of density estimation due to the blankness of high-dimensional space. In order to overcome such difficulties, feature extraction/selection (FE), and pixel representation techniques have been employed. The feature extraction by genetic algorithm is used to select the particular area from the group of clusters.

In this proposed system mainly used for surveying the land surface using dot net. In this survey method different colors are applied to the object using painting tool and converted to thematic map. In this previous system using only RGB color model. However this system uses various color representation. No need to assign the weight thereby reducing the time. The correction and color shape can be easily modified. Any corrupted frame can be removed or modified simply and it can be rearranged to new image.

IV. EXPERIMENTAL ANALYSIS

The survey department admin will register the employee details and allocates the work. After getting the input the employee can use this system and survey the specified area and send the survey report to the admin

Figure1 illustrate that the survey Department   admin register all employee designation details.   The employee details contain unique user name and password of the employee. The authentication is required to access this website the password will generated randomly and send to employees' Email address. The Survey Department admin allocates task (Country , State , city and which location) for each employee through mail with specifying the date for completion. The employees can receive the task at any time and anywhere Employees receive the survey area.
After that the employee will search the website and get input image from saving location by feature extraction /selection method. That image is converted to pixel wise representation.

Then the features are extracted by using SVM, ANN and Genetic algorithm. The Feature Extraction by Genetic Algorithm (FEGA) is based on the optimization of a clustering measure that computes the "quality" of the yielded class-cluster. Using dot net paint the feature selection is done by magic wand tool and using painting tool the color will apply to the similar object with the selected area.

Finally the employee submit the original map and thematic map with the provisioned colors. While submit the reports are automatically send to survey department admin Email Id.
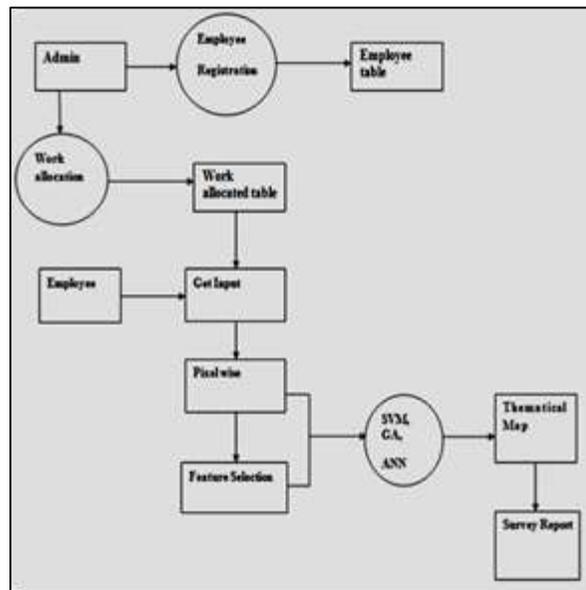
Fig. 1: Overall system architecture

V. FEATURE REPRESENTATION

A. *Employee Details*

The Survey Department admin register all employee details. The details contain each employee designation details. The employee details contain unique user name and password of the users. Authentication is required to access this website. The Password will be generated randomly. The User Id and Password will be sent to each employees' Email Address.

B. *Work Allocation*

The Survey Department admin register all employee details .The details contain each employee designation details. The employee details contain unique user name and password of the users. Authentication is required to access this website. The Password will be generated randomly. The User Id and Password will be sent to each employees' Email Address.

C. *Thematic Map Creation*

Employees receive the survey area. Get input image from saving location. That image is converted to pixel wise representation. Then the features are extracted by using SVM and ANN algorithm. Feature Extraction is done by Genetic Algorithm (FEGA) is based on the optimization of a clustering measure that calculate the "quality" of the yielded class-clusters from a split of features.

D. *Survey Report*

The input image is converted into thematic map. The Original map, thematic map, survey details are sent to survey department. The SVM and ANN provide accuracy details. The report contains easy understand details .This details maintain by long time this website supported. The report contains thematic map with explanation. After some years survey area process easy by comparison of this report details.
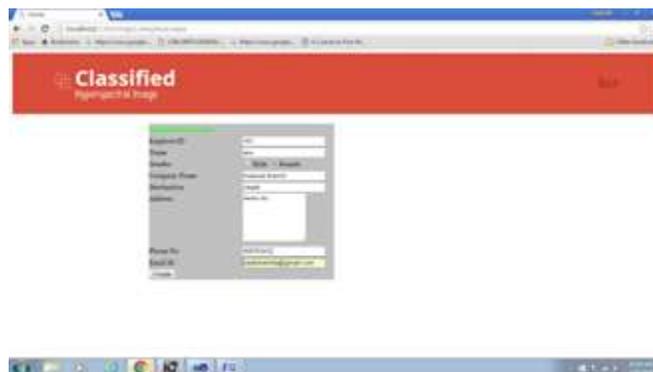

Fig. 2:

Fig. 3:

VI. CONCLUSION

The classification of hyperspectral proposed, implemented, and tested a mechanism for classification method for converting hyperspectral data into thematic map using color representation. Two types of algorithms are used namely SVM (Support Vector Machines) and ANN (Artificial Neural Network). The SVM parameters using BAC (balanced accuracy) and AUC(area under the curve).

Main purpose of the task is to select the different places in Google map by using satellite sensor and select the specific area using combination of SVM and ANN. Colors for selected similar objects the dot net painting tool is used. DOTNET painting is easy to select the object and classify.

The overall goal is to overcome difficulties of classification color representation method by learning how they are correlated with each other in order to further improve accuracy. In this proposed system there is no need to assign the weight and it increases the accuracy thereby reduces the time complexity

VII. FUTURE ENHANCEMENT

As future work will conduct a more detailed investigation of other possible (linear and nonlinear) features that can be integrated in the proposed framework. Based on the observation that kernel-based features may not be as important as other features in our presented framework, the computational complexity can be further reduced by adaptively selecting the most relevant features for classification. Developing parallel versions of the proposed framework with various architectures, such as commodity graphics processing units (GPUs) or multi-GPU platforms.

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