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Research Article

A Comprehensive study on intelligence system for automatize event tracker system using Learning Method

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Abstract

In image processing, the radical scheme is required to propose a model for extracting the required content from an image. It plays a critical position to offer significant facts and needs methods in various automation arenas. By keeping the way of a parting textual content from images has proposed via following the sparse matrix illustration, grouping text components are based on heuristic rules and clustered into sentence generation. This paper directs a study on image analysis that inspects visual items as objects and different text patterns. Logistic Regression, Linear Discriminant Analysis naïve Bayes Algorithm are used to predict the image forms. This proposed work promotes the learning algorithm called Learning Vector Quantization Prediction Algorithm (LVQ Predict) is used to analysis the parts of the image. The features are extracted and classifies into printed and non-printed texts. Further, these texts are normalized and documented.

Key words: Code Book, Data Cleaning, Image Extraction, Learning Vector, Non-printed Textures, Prediction Algorithm, Printed Textures.

1. Introduction

Pre-processing [6] is an essential steps to identify the elements of an image that transforms e-image into a collection of attributes a good way to be interpreted into the OCR system. This technique consist the features of grayscale methods, pixel into binary transformation, thinning process to remove unwanted backgrounds, obtain historical characteristics, segmentation and scalability process. Those are extracting features and classifying into further. In figure is stated as the following:

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Figure 1 Certificate Image Features Extraction and Classification

A few researches [7- 8] that have been accomplished in binarization and segmenting might be reviewed as a recommendation of the technique used in the system. The threshold has set with respect to hue, bitmaps, and segmentation range.

OCR is the stage with the study of supervised learning algorithm on machine learning that facilitate to understand the picture relies on characteristics, devise into classes with highest accuracy from the image set [9-10]. In this model, figure 2 has described that has taken the samples of various images as input. It has six components that follow gray scaling, binarization, segmenting, background removing, thinning and scaling which supports the feature extraction, classifying into set of objects. The streamlined object can be normalized from the dictionaries whereas has historical information that predicts word can be extracted and provides meaningful information.

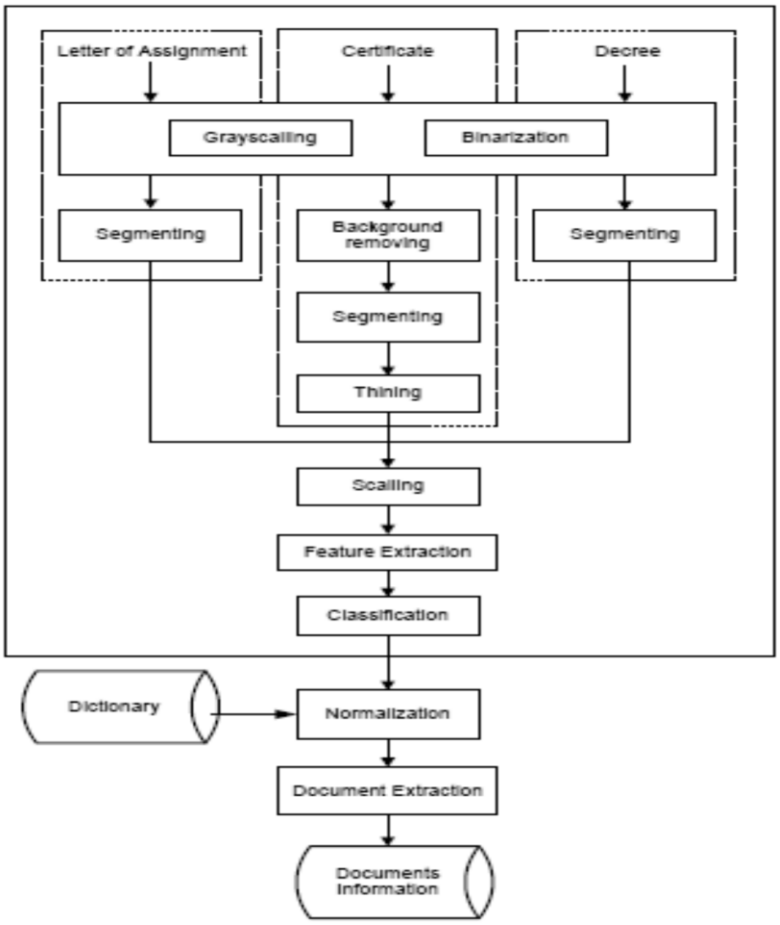

Figure 2 Image Classification Process

DAR is a technique introduced in fully convolutional networks that focusing text and object localization to recognize the text by proposed language modelling facilitated for handwritten images. In additional with this, signature are verified, document are categorized and retrieved [11].

2. Related Work

Jing Wang [1] applied a sentence decoder that gives a technique to predict words through a multi-modularity attention model that determine the features of the images. The comparison made between convention and OCR-based approaches. There are three prominent components of the propped model, MMA-SR is implemented into feature extraction, multimodal attention and word prediction. This model has looked at conventional image captioning, OCR based images are transformed into a spatial relationship of the image that correlates the similarities, textures and patterns. Each entity is accessed into various objects and continues a historic repository associated with LSTM. This muti-modularity simplifies and categorize the features are defined. The final stage is a prediction of words by means of enhancing the probabilities of words are mapped with spatial relationship sets.

Yuming He [2] focused generalized image knowledge with the use of Deep-Learning based algorithm are efficiently worked with images on classification, detection and segmentation. Its miles automatic to look into, analyze the function are hidden in photographs with the aid of repetitive stimulating guidelines some of the records-set.

Seelavathy, et al [3], It's far an elaborate mission due to innovative movements of cellular digital camera beside by manner of hand on shaking, transforming illumination at hand over shade movement, and so forth. It is filtered out from more icons are configured in this model which is improvised the quality of transcription, increase the time of responsiveness and more memory consumption has saved are observed.

Nathiya N & Pradeepa K [4] has proposed a quick and useful cropping algorithm is designed to extract multi orientated textual content from an image. The enter picture is first filtered with the related element method. Related thing clustering is then used to identify candidate text areas based totally on the most distinction. The frame of every linked thing allows splitting the exceptional textual content strings from every other. Then normalize candidate word regions and decide whether every vicinity includes textual content or now not. The size, skew, and shade of each candidate may be envisioned from CCs, to expand a text/non-textual content classifier for normalized snapshots. on this strategies no longer only discover textual content, it also extracts from the image and acknowledges the text in phrases of storing the diagnosed phrases into a separate file with the aid of incorporating numerous key upgrades over traditional existing strategies to advise a unique CC clustering-based totally scene textual content detection approach, which subsequently ends in widespread overall performance improvement over the other competitive methods.

A unique textual content extraction approach [5] was presented from GIF images. Graphical and document related images containing text and graphics additives are taken into consideration as 2D in which defines morphological traits. The algorithm relies upon a sparse illustration framework with as it should be selected discriminative over complete dictionaries, each one offers sparse illustration over one sort of signal and non-sparse representation over the opposite. Separation of text and photographs additives is obtained through selling sparse illustration of input pix in those two dictionaries. Some heuristic guidelines are used for grouping text additives into textual content strings in submit-processing steps. The proposed approach overcomes the hassle of touching among textual content and portraits. Preliminary experiments display some promising effects on special types of file.

3. Intelligence system for automatize event tracker system using Learning Method

Enhancing the images is the challenging task is the real scenario. The main objective is to improve the visibility of the images and further, extract the various features of the images for predicting the required segment of the images. There many techniques available to enhance the images either by equalizing the pixel using the histogram, improving the contrast, or applying the transformation to the features of the images. Artificial Intelligence works in integrating the human with the machine in human cognition, acquiring and calculating the events of processing. Many artificial intelligence techniques are processing the symbolic reasoning in building the recognition and learning actions.

The machine learning solves the complex problems in a faster way of computing to yield best outcomes. Machine Learning algorithms can able to recognize the speech to text, sensing based outcome, effort estimations and lots more. Some of the machine learning algorithms that are used for predicting are linear regression, Logistic Regression, Linear Discriminant Analysis Naïve Bayes and more. The proposed system uses Learning Vector Quantization algorithms (LVQ). LVQ is a supervised learning technique is used to predict the image parts. The proposed Learning Vector Prediction (LVPredict) algorithm initially, extracts the features and classifies the images as program title, program participants' name, program dates and organizer's details. Further, these details are normalized to reduce the duplications in data store.

The input image is divided into distinct regions and for each region reconstruction is defined. These regions are classified and reproduced as a vector. The collection of possible vectors are termed as code book of the quantifiers.

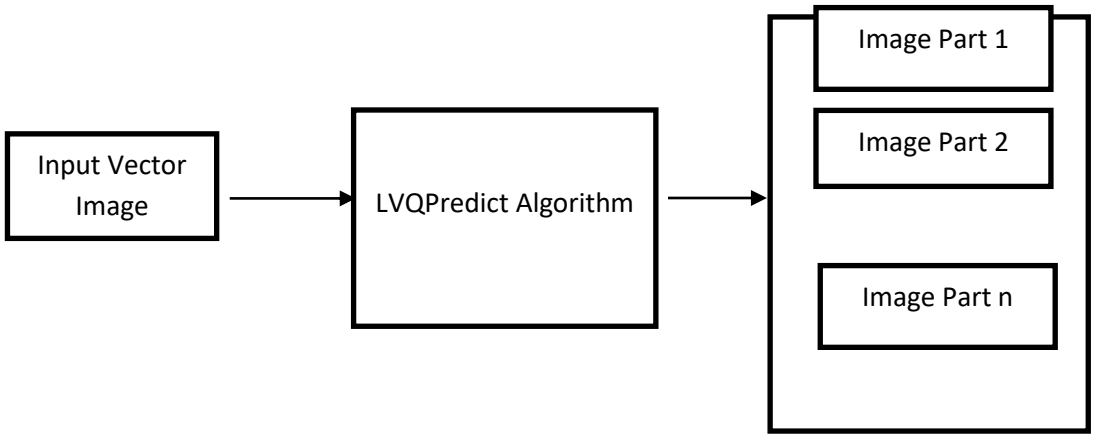

Figure 3: LVPredict Architecture Diagram

The texts in these regions are extracted as printed and non-printed textures. These textures are analysed and duplicates are removed. Then, it is stored into the documents as categorized.

The predictions on the images are made by defining the new instance (X) upon searching the codebook vectors for the K most instances. This first part of algorithm segregates the image features. After classification are completed, the data mugging function is performed. To predict the duplication Euclidean distance is calculated. The similar images with new input are compared by this distance measure. The Euclidean distance can be calculated by

$E(X,x_i) = sqrt(sum(X_j - x_{ij})^2))$ ---------- (1)

From the equation (1), Euclidean distance E can be calculated by finding the square root of the summation of the difference between the new point (X_j) and the existing point x_i.

The matched on the image part are removed and remaining part are extracted to store as documents.

4. Results and Discussion:

The Learning Vector Quantization Prediction method (LVPredict) predicts by reading the codebook book data randomly as input vectors. The vector instances are processed one at a time. The Learning algorithm with LVPredict extracts the image features and avoids the duplication in an efficient manner. The image parts are constructed as vectors in such a way to undergo normalization process. After normalization process, the data as the documents are stored in the data store efficiently.

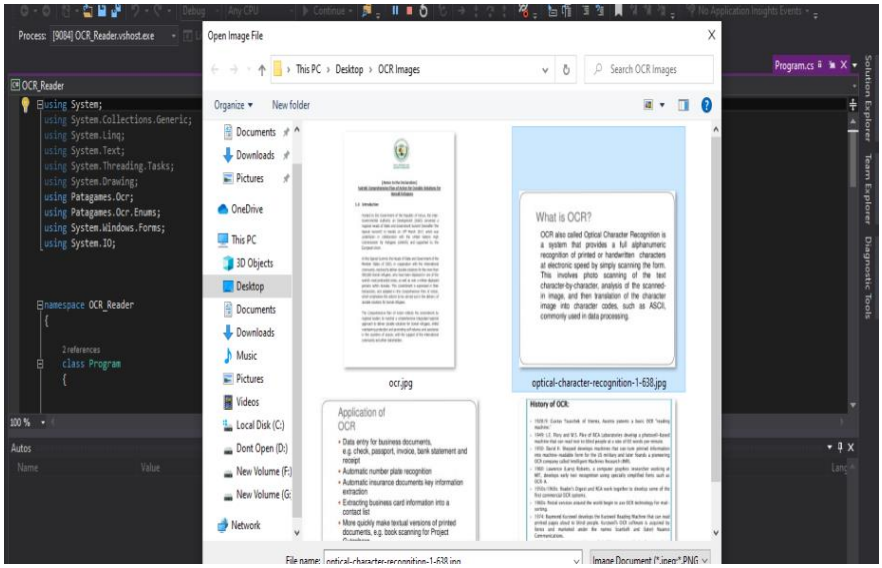

Figure 4: Image Extraction Process

he Figure 4 is the explains the process of extracting the images using the Learnng Algorithms. Here the text content is sepeated as printed and non-printed textures. Thes eclasifications are further analyzed, normalized and stored as a document.

5. Conclusion

The Learning Vector Qubatization Prediction (LVQPredict) is proposed to predict the images into textures. These textures are clasified into printed and non-printed text. Then the dupilcations are removed by finding the Euclidean Distance Measure. Finally, the text are stores as document for future accessing.

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