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Texture Recognition and Pattern Matching Using Natural Language Processing (NLP)

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Abstract

As the increase in the software technologies the latest application and models have been developed using the machine learning and the artificial intelligence. The artificial intelligence can reduce the work of the people and it can perform the entire task instead of humans do. The AI can use the pattern recognition, natural language processing. In this paper they use the medical record of the patient in the artificial intelligence it can measures the large amount of data. It can reduce the human work. The machine language can extract the data and ID to help the people who observing the report manually. The NLP can extract the answer for the drugs and the antagonistic. The classification of the information may undergo two set of methodology casual sentence classification and non causal sentence classification. The casual sentence can show the connection between the drug and treatment. The identification of the drugs can be done in which the drug is compared with the medication present in the report. It can evaluate of about 0.93 and the review is nearly 0.76 when compared between the medication and the drug it comprises of about 5674 data in the dataset.

Keywords: *Artificial Intelligence, Pattern Recognition, Signal to Noise Ratio, Pattern Matching, Natural Language Processing.*

1. Introduction

By the survey of the current period AI can plays a vital role in the computer technology. It can do all the work which can do by the human. It reduces the work of the human in different ways. It can map the behavior of the human in the computers. It can perform a large amount of data in a reduced period of time. The data can be classified based on the several parameters. It can interconnect various techniques such as linguistics, computer intelligence. The data in the sets can be trained already at the period of starting the program. Machine learning is the branch of the artificial intelligence it does not follows the strict order performed by the program it follows the data in the training set. The NLP which is the natural language processing it can execute the data in the form of human regional language. It can applied in the medical research where the medical report can gathered the detail of the patient including ID, kind of disease, and the medical diagnostics. The computer can maintain the all the kind of data. So the AI can be applied and differentiate the data into two path one is the useable data and the other is the un useable data. The useable data can be separated and the NLP is performed in which the data can be converted to the human regional language. The machine learning can undergoes the raw data extracting to find the patterns it will not follow the extraction of the data extraction.

The data can be learning in two different methods learning with supervised and learning without supervised.

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The learning without supervision it can identifies the patterns and the learning with supervision involves classification and regression. The patterns are in the language form. The pattern is formulated in the raw data in the data base. The pattern is recognized various field like cognitive science, computer science. By the use of the language patterns it will help to understand the difference between the singular, plural. Based upon that it easy to form the sentence using noun, verb, adjective, phrase, articles. It will able to develop the language to the children and the uneducated people. Natural language can provide the way to the computer to understand the human language.

2. Literature Survey

Nicolas Jayet., al., proposed in the hospital the reception sections has maintain the record of the stock billing of the medicine, the enormous amount of data are allocated in the electronic wellbeing Records (EHR). The large amount of data can be minimized to the useable data. The data get reduced based upon the main characteristics for the billing, research. Several techniques had been implemented to connect the drugs with neurotic conditions. The interlinking can be made using the EHR components. Huge amount of the data can be stored and handle using the EHR method. The data can be allocated in the various segments such as the medicine reports, patient notes, and scan reports. The electronic wellbeing records have connected the various sets of data in the medical stock billing. It can maintain the data in the highly confidential manner. The issues can be taken in to concern in high caliber. The investigation is made for the measure of data and information in the sections. [1]

Ham M. Raraet., al., proposed in current technology the face recognition can be done in the limited distance between the face and the camera. The person should focus near to the camera so that the camera can capture the face and comparison is made with the data in the base section. In this paper they propose the face recognition is made by long distance. It can focus the face of the person by the help of the texture in the face region. It can be formulate using the two various method of algorithm the first pair is the dense stereo matching using maximum posterio Markov random field algorithm (MP-MRF). The second pair is the active appearance model which can fits the face image within the crop section box. It can formulate the clear images of the face form the long distance. Experiment has been made using different characteristics using the short and long distance. The CMC cumulative modern curve is future designed frame work for the clear appearance of the long distance image capture. [2]

Thomas Josephet., al., proposed as the population is growth increased in which parallel the medical field is also increasing. The consumption of the medical drugs can be taken by the people is raised. Because each and everyone can be suffered from some health related problems. The health problems can be raised due to the changes in the lifestyle. The several kinds of drugs can be introduced in the market. The marketing can introduce the drugs to the market but the drugs can create some side effects. These side effects can affect the people health. The pre marketing survey clearly says the medicinal trials can be spread in a short span of time. So there is the monitoring of the drugs in the market to protect the people from the danger. To make the drugs safety for that the pre marketing mechanism has been introduces that is the Pharmacovigilance PV it can be formulated by the WHO. Before the drugs processed into the market assessment, adverse effects and other drug related problems. The collection of the drug data is made through AE adverse Event. The pre marketing mechanism can helps to analyze the side effects of the drugs. [3]

Nigam H. Shahet., al., proposed in the year of 2013 the report from the department of healthcare research and quality says nearly 1.2 million of the people visit the emergency departments in united state. The main reason is the increase in population and the food contamination. The drugs in the market can be subjected to side effects. The health monitoring association is the drug adverse event can missed to proper of the drugs due to the short period of time and increase in the population. The AES risk can be raised by the cumulative of time and high dosage of drug. The drug can react with another drug can create side effects which can affects the health. The data from the SRS like food and drug administration can reports the data of the drugs ratio in the medicine. The difference can be made between the ROR reporting odd ratio and PRR proportional reporting ratio. [4]

F. Cervelliet., al., proposed in before period of time when the crime takes place in the area it is difficult to find the main acquits. So the police department take some period of time to found the acquits. They need huge steps of process in the intermediate period of time. In the technology improvement by using the foot prints or the finger prints of the person can be easy to spot the acquits. The shoe prints in the crime area can helps the department more. The shoe prints can be characterized by the texture recognition using the frame work technique. The camera can make the over line of the foot print structure after that the texture of the foot print layer can be easy to capture the exact image. In this paper they consider the artificial designed crime scene in which it can mark the shoe print and the layer can be subjected to the texture recognition. From the certain distance the shoe mark created by the foot print is analyzed. It can be applied to the real time scenario it will shows the better result. [5]

Jun Zhaoet., al., proposed the large number of data is allocate in the NLP. To maintain the data the arrangement is needs. The arrangement of content is the major task in the NLP. Normally the content arrangement can be made by the human structured highlights. The manual arrangement can

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be based upon word references, tree bits. Based upon the strategies human structure highlights is restricted and the arrangement is made by using the convolution neural network. It can formulate the information based on the several logics. In this paper they propose the intern structure in which they can capture the preferred data based upon several characterizations. Here the proposed method use the window based neural system. It can gathered the efficient data from the overall structure by the user of various data layers. The key words are gathered to form an effective data key for the sentence arrangement. Four different sets of database can be used for the perform trial version. The framework is made using the edges of the proposed method. The outcome is helps to predict the data in a short way. [6]

Manfred Breschet., al., proposed the design of recognition of the images can be made in numerous methods. But all of them didn't provide the accurate result. So the method is employed in this paper which is the rotational and texture recognition. The recognition of the images can be compared with the data base recognized images. The comparison is lies in features and the recognition. The features can be extracted from the filtering process, which can guarantees the rotation and scale invariance. Polar logarithmic orientation can perform the major role in the filtering of the recognized image. The noise from the image can be removed from the reorganization. This method is employed in textile textures, horny textures. The rotational and the invariant classification are made the two sets of section. The multichannel is created for the extraction of the features. By employing the method of texture the recognition can be made perfectly without any loss in the data and the result is accurate. [7]

Feiniu Yuan et., al., proposed due to the pollution in the environment visual scene can be much affected by the smoke and fog. So it difficult to recognize the colors, textures and shapes. To overcome the problem and to improve a novel approach in binary patterns. It takes place between the similarity and dissimilarity measures. The similarity and dissimilarity can be characterized by the ratio of 1:1 bit matching, 0:0 bit matching, 1:0 bit match, 0:1 bit match. Measure the local code the calculation is made to detect the local variations. The similarity with the local binary patterns is the SLBP and the dissimilarity with local binary patterns DSLBP. Both the SLBP and DSLBP can generates the spatial line in the 1^{st} order and the concentration in the pixels in the 2^{nd} order. At last the combination of the LBP, SLBP and DSLBP forms a vector containing 1^{st} and 2^{nd} order. The similarity and dissimilarity of the bitwise code patterns can provide the exact pixel quality measures. The haze and noise can be removed by the above methods. The framework design canarrange in the edges for the segmentation. [8]

Abbas Memişet., al., proposed the facial image can be recognized by the Neighborhood binary patterns method NBP method. Images can be characterized by the texture and it can be represented as the binary code. The texture of the facial images can be split into numerous blocks. The facial features can be categorized with the help of the binary codes and the neighborhood information of the facial blocks. The mathematical calculation is performed for the classification of the facial images using the KNN algorithm. The various parameters has been characterized the NBP method which shows the better accuracy. The NBP method as the superior performance. The neighborhood blocks can determine the pixels and clarity of the images. The texture can be classified using the binary code into number of patterns. Experiments are carried out by using the binary code. [9]

Fu Liuet., al., proposed in the industrial and the various companies uses the palm print for the maintenance of the attendance record. So the palm print of the individual can be collected and stored in the database for the feature verification. The palm print is recognized when the comparison has been made. So for the better prediction of the palm print is further improved with the texture with the multi resolution methods. The texture of the palm print can be formulated using the wavelet algorithm. The classification of the texture can be data clustering. The features can be extracted from the filtering process, which can guarantees the rotation and scale invariance. Polar logarithmic orientation can perform the major role in the filtering of the recognized image. The noise from the image can be removed from the reorganization. This method is employed in textile textures, horny textures. The second pair is the active appearance model which can fits the face image within the crop section box. It can formulate the clear images of the face form the long distance. Feature matching the calculation has been made between the classes.[10]

3. Proposed Method of Texture Recognition and Pattern Matching Using Natural Language Processing (NLP)

In this paper they use the natural language processing methodology it can make through the artificial intelligence. The data can be processed by the computer with the help of machine language AI. From the entire data is separated into useable and non useable sets. The useable data can be extracted using the natural language processing NLP. It can be applied in the medical record the entire data can be characterized using texture recognition the medication present in the report is compared with the drugs for the identification of the drugs and the dosage. The result can be extracted in the form of natural language processing.

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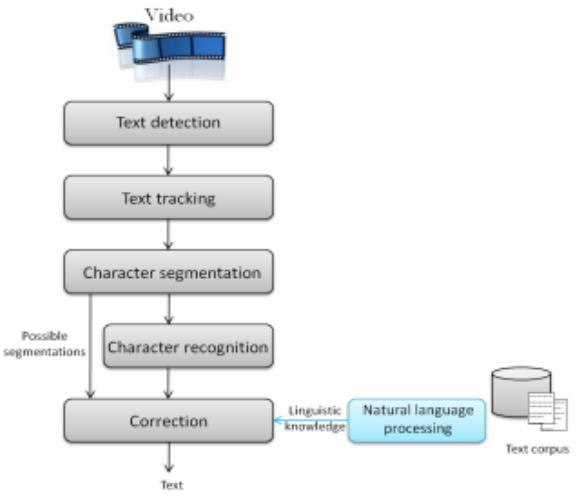

Figure 1: Flow Diagram of Texture Recognition

4. Results and Discussions

In our proposed system we are going to analyze and predict the content or text from the given set of images through the concept of NLP. We already have a set of bench mark data sets which will have all the probabilities of alphabets and numbers in it. The given input image has to undergo pre-processing stage. First the input image will be in RGB format it has to be converted into grey scale. Then resize of the input image takes place. Generally the input image won't be clear as noise presence will be very high. So first we need to remove the noise it is done will the help of median filter. Then the process of matching the input image and the stored images takes place. Then final stages are segmentation and classification stage. Here according to the machine learning algorithm called as SVM (Support Vector Machine) helps in the classification of mining the text or content from given set of data's. The following bar graph represents the comparison between the text mined from the existing method and proposed NLP method. Results show that the NLP method which we are using gives accurate results in text and pattern matching.

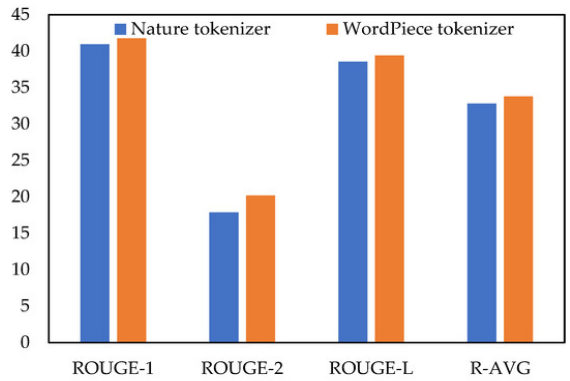

Figure 2: Comparison graph of existing and NLP method.

5. Conclusion

Text and pattern matching plays a vital role in the field of machine learning. All the existing methods show less accuracy than our proposed system because we are using the concept of NLP. This NLP has its own significance and importance because this system is very user friendly and gives more accuracy in output. The best part of NLP is we can alter the output accuracy according to the user interface and can be manipulated at any time. So finally we can say using NLP gives best accuracy n text and pattern matching.

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