A SURVEY ON PREDICTING ASTHMA RELATED THREATS IN HIGH DENSITY INDUSTRIAL ZONES

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*Abstract--*In this paper, a survey has been done on the artificial neural networks techniques for diagnostic of asthma attack by classifying the trade employee's datasets. This exploration assembles typical work that shows however the artificial neural network is applied to the answer of the asthma attack classification. Public health watching systems area unit extremely unworkable for densely inhabited countries like Asian nation. Folk's health sector area unit fully separated from one another. To avail minimum health security in extremely important areas. The artificial neural network approach is used to classify by back propagation network.

KEYWORDS clinical datasets, artificial neural network, asthma attack classification, machine learning.

I. INTRODUCTION

Artificial intelligence is that the science and engineering creating the intelligent machine, a neural network could be a system composed of the many easy process parts operational in parallel whose operate is decided by network structure, association strengths, and therefore the process performed at computing parts or nodes. The neural network is extremely interconnected sizable amount of process component is named neurons in on impressed by the brain.

A neural network primarily based health analysis system for industrial staff. Health records of staff from industries square measure gathered. Exploitation machine learning approach the prediction method is undertaken. Once the pre-processed information are often classified with the assistance of artificial neural network. ANN could be supervised classification technique requiring coaching dataset learning. When the classification is used to easy way to predict the disease in short time period which is also finding problem in earlier. Then the learning method is easy way to identify the result because it is used in back propagation.

CLINICAL DATASET FOR INDUSTRY WORKERS

Within the dataset may be trained with ANN during this technic oppression of ANN with pattern recognition tool which will be performed within the classification method. Then the overall dataset may be foreign with input worth and output worth.

Table 1 clinical datasets

NAME OF THE DISEASES	NUMBER OF INSTANTS	NUMBER OF ATTRIBUTS	NUMBER OF CLASS
Asthma	500	10	3

Out of Sample dataset of 500, ten samples area unit given within the neural networks and this can be trained within the hidden layer. That will produce the certain condition. It will support with future concern; the target knowledge sample of three. The trained knowledge set is displayed within the target knowledge. That the clinical data set taken from the industries for worker report.

ANN could be a supervised classification technique requiring a coaching dataset. First, we tend to extract a knowledge set containing five hundred data from our respiratory disorder stream delineated earlier, i.e., every knowledge within the coaching dataset contained a minimum of one asthma-related keyword. This knowledge set was divided into 3 components and every data manually tagged by 3 researchers as "asthma moot." The annotation criteria for asthma related dataset included: an announcement that the individual has had asthma; and supporting criteria included: (1) severe issue in respiration as a part of a distinct attack, (2) shortness of breath-triggered by exercise, stress, smoke, or irritants, 3) dark coughing length bigger than one month, 4) case history or childhood history of respiratory disorder, or 5) use of Associate in Nursing dispenser. This classifier was trained on this dataset. The TF-IDF is

1281

tool principally accustomed info retrieval and text mining of information, once the prediction knowledge is accustomed classify.

A. Overall Structure

Figure 1 overall structure

II. ARFICIAL NEURAL NETWORKS

Figure 2 artificial neural networks
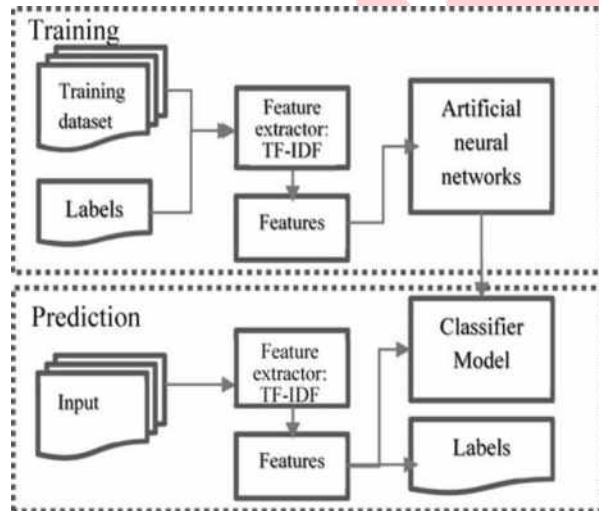
live input layer hidden layer, and output layer. The hidden layer is to map thecomputer file which will be reborn into output layer. Neural network approach relies on machine learning techniques.it is running at parallaly. this could be use supervised learning that maybe accustomed train the input operate .when the mathematical learning functions unit of mensuration alter the load and biasmechanically that is additionally used at intervals the rear propagation network .the neural networkwill store the information in dynamically .This model used for some classification methods: call tree, naive man of science, SVM and ANN and compared their classification accuracy and along used at intervals the techniques referred to as adaptational boosting and stacking, to cut back the classification errors. It'll manufacture at intervals the result's 3approach classification low, medium and high to classify the prediction.

A   Decision Tree

A decision tree is a prediction model. This maps observations regarding an item to conclusions regarding the items target worth. It is one among the prophetical modeling approaches utilized in statistics, data processing and machine learning. Tree models wherever the target variable will take a finite set of values as referred to as classification trees. In these tree structures, leaves represent category labels and branches represent conjunctions of options that cause those category labels. Calltrees wherever the target variable will take continuous values (typically real numbers) as referred to as regression trees.

B   Naive Bayes Algorithm

The stubborn sample quality for learning theorem classifiers, we have a tendency to should search for ways that to cut back this quality. The Naive Bayes classifier will this by creating a conditional independence dramatically reduces the amount of parameters to be calculable once modeling

1282

P(XjY), from our original 2(2n⧠1) to merely 2n.

Support Vector Machine

A support vector machine (SVM) may be a supervised learning technique from the sphere of machine learning applicable to each classification and regression. SVMs are a replacement technique appropriate for binary classification tasks, that is said to and contains components of non-parametric, neural networks and machine learning. This are classical techniques, SVMs additionally classify a corporation as solvent or insolvent in keeping with its score worth, that may be a operate of chosen money ratios. However this operates is neither linear nor constant quantity. The formal basics of SVMs are later on shortly explained. The case of a linear SVM, wherever the score operate continues to be linear and constant quantity, can initial be introduced, so as to clarify the conception of margin maximization during a simplified context. Later the SVM are created non-linear and non-parametric by introducing a kernel. As explained additional, it's this characteristic that creates SVMs a great tool for credit evaluation, within the case the distribution assumptions regarding offered computer file can't be created or their relevance the palladium is non-monotone.

III. Asthma

Asthma is one in all the foremost current and expensive chronic conditions in our nation. It's a typical flammatory airway unwellness that affected with three hundred million individuals in Asian nation. Shortness of breath, cough and asthmatic square measure all symptoms of respiratory disorder. Your throat goes dry and chest feels tight, you gasp for breath and square measure unable to urge enough air to the lungs. These square measure a number of the only a few symptoms of the chronic condition, asthma

figure 3 lungs affect with asthma

It is a condition that affects the lungs, significantly the airways. Airways square measure passages through that the air flows into the body. If the airway is slender, then it's obvious that the you are not obtaining the number of element that you simply ought to Smog, stressor a nasty diet, completely something may trigger associate in nursing respiratory illness that is why those stricken by this condition got to be extraordinarily careful.

IV. PORTER STREMMING ALGORITHMS

In this paper we have a tendency to ar proposing a completely unique methodology for extracting the emotions from news headlines. during this approach we have a tendency to ar mistreatment porter algorithmic program for preprocessing and SVM classifier for classification.
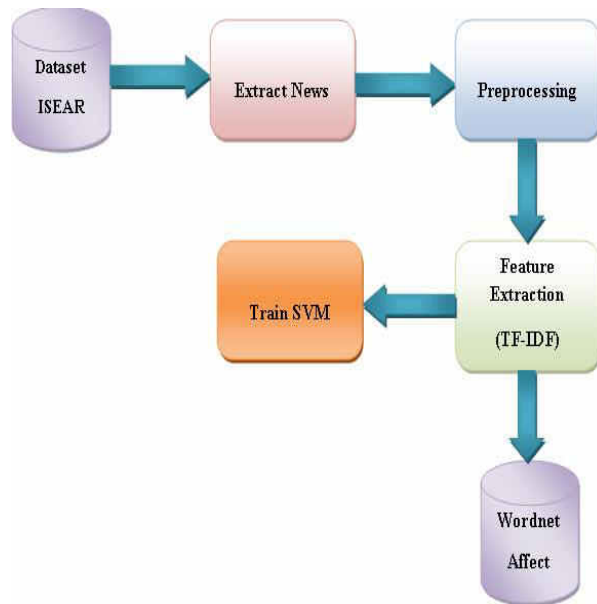
Figure 4 conceptual models for training phase

RELATED WORKS
In this paper having two phase that are:
  1. Training phase for Conceptual models.

  2. Testing phase for Conceptual models.

Training phase for Conceptual model.

In paper training phase having six blocks the first block is dataset, and then another block is dictionary.
Dataset
    This dataset can performed to train The ISEAR dataset consists of 7,666 sentences and also participated in different countries people then collecting questions from that people they are tell some emotions: anger, disgust, fear, sadness, shame and Guilt. That will be tested.
Extract News:
In this block extract the news form ISEAR dataset.
Preprocessing:
This block performing preprocessing block which is also use various operations That is filtering, tokenization, stemming and pruning etc.it will be used for future work of the project.
Feature extractor TF-IDF
        It will process by extraction operation that can be extracting the information or retrieving the information from the extract news. This method is used for predicting user need data.

Dictionary (WordNetAffect):
        It contain the dictionary that will be having basic emotion i.e. disgust, anger, fear, sad and joy Surprise this information used for predicting the data.
Train SVM:
The SVM is the supervised learning method so we have to train our dataset first with the help of this Dictionary i.e. Word Net it will affect the feature extractor so we can train SVM classifier.

2 Conceptual models for testing phase
        In this phase containing several blocks but some blocks already discussed
Emotion prediction:
 In this paper final output is emotion.
Validation:
        The validation is after producing the output then it will compare with the emotion.
Annotations:
        The annotation is the set of dataset function process that are that are match with the emotion is called annotation.

Table 2 result for different classifier

classifier	Precision	Recall	F1 score	accuracy
Naïve Bayes Classifier	55.3	60.6	61.2	60.8
Vector Space Model	59.1	59.4	28.5	34.8
Support Vector Machine with Porter algorithm (Proposed Method)	59.38	76.25	67.004	71.64

This table consist of different classifier result but the best classifier is SVM classifier.

V. RESULTS AND ANALYSIS
        In this Section, we explained sample result which was obtained by using ANN method. The input is workers clinical dataset can be preprocess the dataset based on the supervised classification in SVM

1284

classifier. The sample screen shots are shown in fig 8 to 12. The following figure explains the sample result
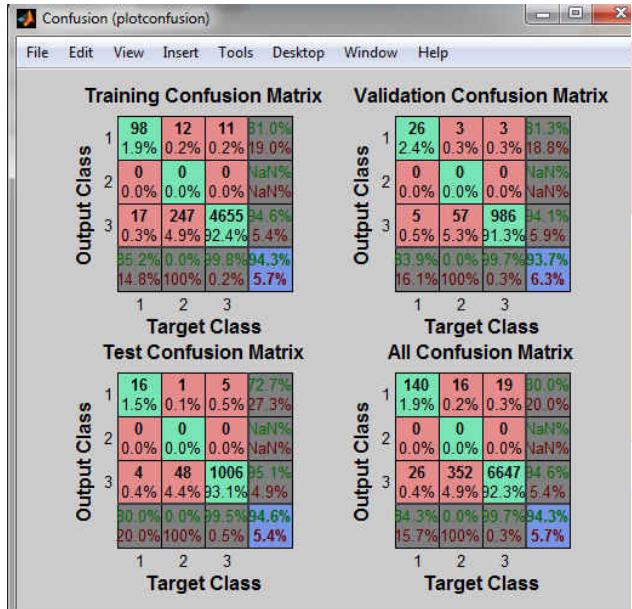

Figure 6 training dataset and classification

       The screen shot in figure represents the nearness between the output information sets and targetinformation sets. The 3 phases of datasets area unit tested which has coaching validation and testing.

       The screen represents the match between true positive and false positive for training data set in all three phases. The true positive nature of ROC indicates certainty of disease and diseased data sets and then false positive indicates the probability is the healthy datasets are assumed to be diseased. The system with minimum false positive rate is desired.
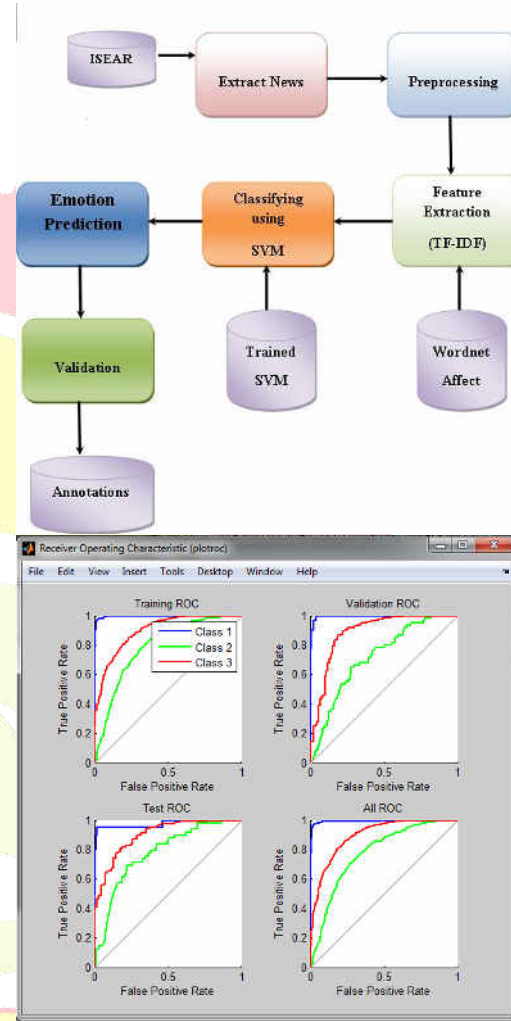

Figure 7 plot graph

VI. CONCLUSION

       The clinical datasets ar collected from the economic employees. These ar trained within the artificial neural network. once the datasets ar trained, these ar valid and tested within the networks. The match between true and false positive ratios is tested in 3 phases. actuality positive nature of mythical creature indicates certainty of malady identification for morbid knowledge sets and false positive indicates the likelihood with that the healthy datasets ar assumed to be morbid. The system with minimum false positive rate is desired. Future work is that the classification of preprocessed knowledge with 3 conditions severe, slight and traditional for the respiratory illness.

1285

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