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Live Chat Analysis Using Machine Learning

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Abstract

The World Wide Web such as social networking sites and blog comments forum has huge user comments emotion data from different social events and product brand and arguments in the form of political views. Generate a heap. Reflects the user's mood on the network, the reader, has a huge impact on product suppliers and politicians. The challenge for the credibility of the analysis is the lack of sufficient tag data in the Natural Language Processing (NLP) field. Positive and negative classify content based on user feedback, live chat, whether the user is used as the base for a wide range of tasks related to the text content of a meaningful assessment. Data collection, and function number for all variants. A recurrent neural network is very good text classification. Analyzing unstructured form from social media data, reasonable structure, and analyzes attach great importance to note for this emotion. Emotional rewiring can use natural language processing sentiment analysis to predict. In the method by the Recurrent Neural Networks (RNNs) of the proposed prediction chat live chat into sentiment analysis. Sentiment analysis and in-depth learning technology have been integrated into the solution to this problem, with their deep learning model automatic learning function is active. Using a Recurrent Neural Networks (RNNs) reputation analysis to solve various problems and language problems of text analysis and visualization product retrospective sentiment classifier cross-depth analysis of the learning model implementation.

Keywords: Recurrent Neural Networks (RNNs), Natural Language Processing (NLP), Linear Regression (LR), Support Vector Machine (SVM).

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Introduction

Advances in technology have the opportunity to improve the provision of their online services to continue to provide to the company. Many companies now, through the instant messaging platform, called the "live chat analysis" system, provide customer service and online support. In these services, it can find the information that the customer associated with the service from the organization through the humanized service personnel to provide an answer through an online-based synchronization media and these media. Despite the environment, whether online or offline, it is important that the organization is to achieve high-quality customer service. Therefore, in an attempt to provide effective online customer service, features of the online service desk or online chat, have been adopted as a customer service platform.

Online chat service, which has many potential advantages, the success of these facilities is dependent on the experience encountered in the course of use. It's the face-to-face face, telephone, social media, and when it comes to asking for help from customer service, such as e-mail, usually, customers have a variety of options. Nevertheless, now many customers prefer to use such products, order, place the information and shipping inquiries issues related to online services, such as on obtaining, live chat function for you.

Online real-time chat system, which has improved the utility of the service experience, research, and promotes dynamic understanding, influencing factors of this concept is existing a little literature. Therefore, it is very important to understand the variables that can be brought into contact with the real-time chat operator to affect the customers of the service.

A successful model of the information system is, in the present study, explores the variables that can affect the experience of in the course of human contact of service personnel in satisfaction and online real-time chat service of the customer. As far as know, more and more as a company and the customer is a customer support function, but have adopted a real-time chat, real-time chat experience of satisfaction influence any empirical research to explore the variables that give the It is therefore an object of the present method is to understand the real-time chat system on the Internet, to fill the gap of knowledge, and provides the empirical point of view to promote the company's online customer support.

Therefore, no matter how from marketing materials and information science literature of service, includes the main aspects, to map the successful model of a useful information system to gain an understanding of the customer experience based on the network. Therefore, service, information, and initially it surveyed technical variables, since in contact with a particular real-time chat feature, to influence the use of the online chat service in a variety of purposes, in this study, understand and contribute to online customer support service in the form of a live chat function in the next section, it describe the conceptual background.

Related Work

Opportunities for communication, such as reducing day by day, young people, it is a loneliness in several elderly people than live together, and it reducing society. To resolve this problem, in the first test, the system has been designed with support to the user during a call for viewing a TV program.

To achieve an asynchronous response, the nature of time, look at the online social media, users of the relevant television program, provides an interesting word. Episode skill is equipped with Facebook has started an analysis of Facebook real-time chat.

But how, why that the people to live streaming on Facebook is not well understood. Under the guidance of use and satisfaction of the theory, it analyzed the real-time chat of public and private. These are all of the collected data set that is used by the real-time video streaming service provider. After detailed analysis of the data set, non-verbal communication is often called the body language, if it is, including the social and psychological communication expression of the relevant information in particular, in the interactive drama it is the dominant role.

And re-use of the voice of the user, to increase the opportunity of conversation between living alone the elderly, have spoken and chatting robot system of the robot have been developed. Previous system problems, that discourse has been selected by the system administrator, have been changed from unnecessary discourse to the deformation of the crude and vulgar words.

In the existing research, the performance of the automatic image annotation, especially for the art of the work image, but is not good. On the other hand, existing GWAP, there is a problem of using the game as the address person,

game shows how to use the concept of human intelligence in the label image, and it is the impossible computer is resolved.

It have been committed to the research and development of robots for the chat with the elderly. The proposed categories are estimated based on the voice chat robot system. Also flourished live chat service, continues to grow on the Internet.

Unlike television shows and movies, can be real-time streaming has a longer length as the variable, and there is no limit to the specific content. In this method the chat function of field service that it is important new implementation main types of e-commerce web sites that are supported by the customer has been investigated.

Materials and Methods

The proposed service quality of instruction, information of data collected, and pre-processing then the classification of the system, affect the importance of the satisfaction of the experience, and this effect will vary depending on the intended use. Also, the result is an overview of the role of emotions, the presence of service personnel, is a Natural Language Processing (NLP) real-time chat of analysis.

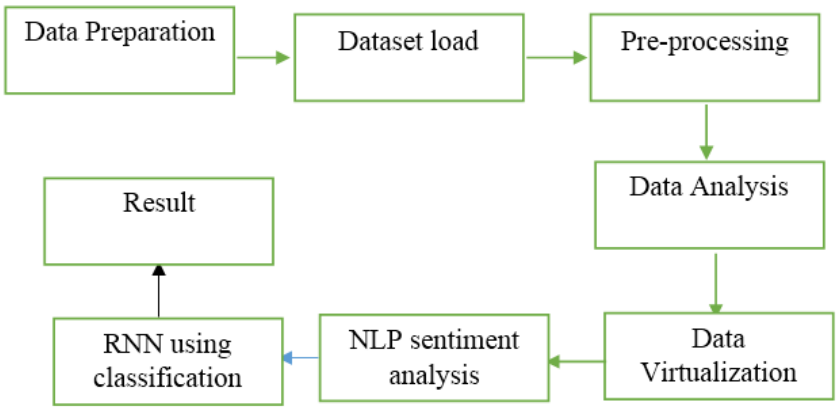


Figure 1: Proposed Diagram

Figure 1 shows the proposed diagram for the live chat analysis performance on the Natural Language process performance on the live chat analysis the machine learning Recurrent Neural Network (RNNs) algorithm.

Data Preparation

Data preparation is clean, process, and analyze the raw data before the conversion process. This is frequently toward the pretreatment and reformatting the data to include a data set to a rich combination of important step data.

Dataset Load

Load single data table approach provides a technique for filling in the Example data reader from the retrieved data. This method provides the same functionality but allows the user to load a plurality of the results of a set of a plurality of Data Reader tables in a dataset.

Data Preprocessing

Pre-processing data is an important step of data mining process. The phrase "garbage in the house," will be applied to the data mining and machine learning project. The data collection method is usually controlled as possible combination and range loose values of outside data value does not exist.

Data Virtualization and Natural Language Process (NLP) Sentimental Analysis

Natural Language Processing (NLP) is the relationship between a computer and a human language. Natural language speech analysis refers not only audible voice, and text in the language. The NLP system captures the meaning from text input.

Recurrent Neural Network Using Classification

A recurrent neural network is a type, which is connected between the nodes is formed with time to Recurrent Neural Network.

Result and Discussion

The proposed algorithm Recurrent Neural Networks (RNNs) using result performance on the live chat analysis using Natural Language process using live chat analysis performance.

Table 1: Analysis of Accuracy Performance

No. of data	LR %	SVM %	RNN %
10	25	40	75
20	29	48	80
30	45	60	86
40	30	55	95

Table 1 shows the analysis of accuracy performance on the proposed method Recurrent Neural Network algorithm performance on the table value.

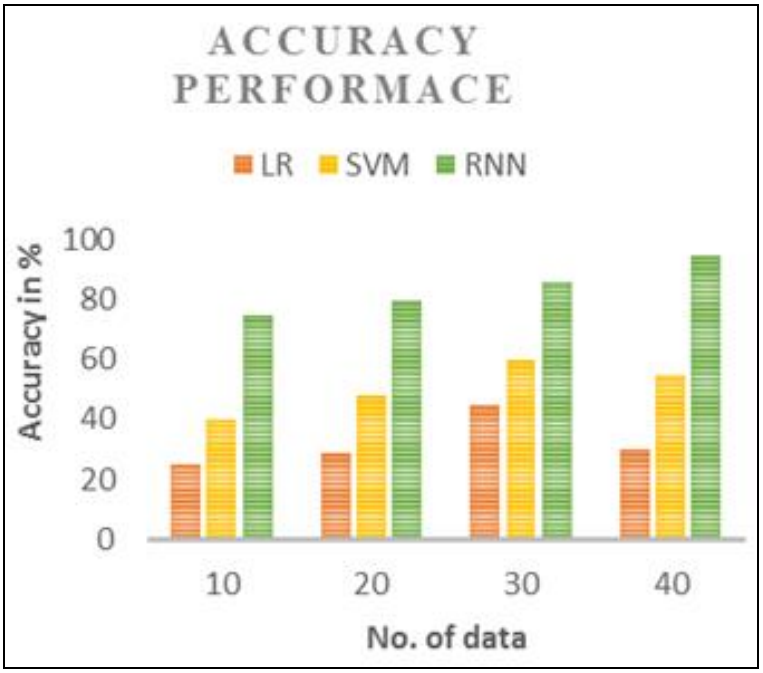


Figure 2: Performance on the Accuracy Level

Figure 2 shows the analysis of accuracy performance for the proposed method Recurrent Neural Network algorithm performance. The existing Linear Regression (LR) is 30% and the Support Vector Machine (SVM) is 55%. The proposed algorithm Recurrent Neural Network (RNN) result is 95% for accuracy level.

Table 2: Performance of Time Complexity

No. of data	LR (ms)	SVM (ms)	RNN (ms)
10	42	32	30
20	40	30	25
30	50	40	15
40	38	44	10

Table 2 shows the time complexity performance on the proposed method Recurrent Neural Network algorithm performance on the table value.

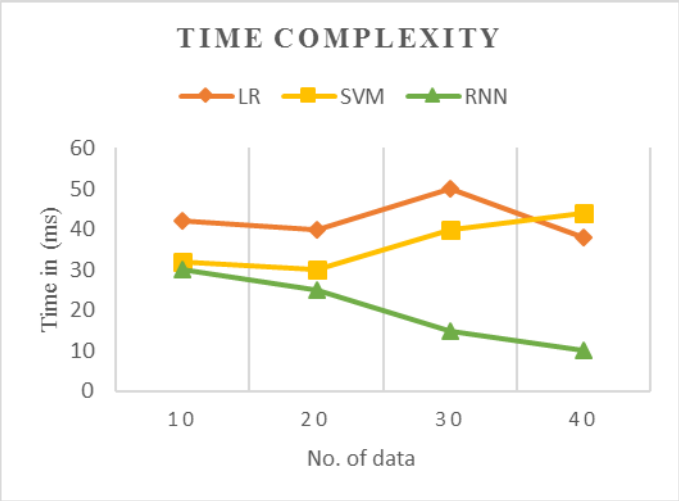


Figure 3: Time Complexity Performance

Figure 3 shows the time complexity performance for the proposed method Recurrent Neural Network algorithm performance. The existing Linear Regression (LR) is 30% and the Support Vector Machine (SVM) is 55%. The proposed algorithm Recurrent Neural Network (RNN) result is 95% for time complexity level.

Conclusion

Live chat will be able to chat classification using Recurrent Neural Network using the performance. Live chat is ideal for phone calls and e-mail. What visitors need to do is to send enter e-mail address in the chatbox. If it using, interview web-based survey, is the actual, including increasing the experience of real-time chat service, and the presence of the network provider of mobile phone to adopt the whole of the structural equation model between the Natural Language Processing (NLP). The proposed algorithm using RNN for the classification of online live chat services. As a result, preprocessing data and data analysis for good sentimental analysis performance for Recurrent Neural Network performance. The proposed algorithm Recurrent Neural Network (RNN) result is 95% for accuracy level. The proposed algorithm Recurrent Neural Network (RNN) result is 95% for time complexity level.

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