

Implementing E-Negotiator Chatbot for E-commerce Website

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Abstract: - Negotiation is a key component of real life transactions. From major business deals to buying vegetables it acts as one of the key elements of cracking the deal. E-commerce Chat Bot System that is Price Negotiator system makes the e-commerce sites to have their works in efficient manner. This E-commerce Chat Bot System project would help to automate the online selling and negotiation based on price of product.

Customer satisfaction is the major concern for all the web based applications and chatbots helps them work this major concern as customers do not need wait for customer executives to solve their queries. Chatbots can solve most of the customer queries without the interference of customer executives. Negotiation is a combination of both, linguistic and reasoning problems. It requires an intention for something which needs to be verbalizing.

Key Words: Online Shopping, Chatbot, Negotiation, E-Commerce Field SVM - Support Vector Machine, NLP - Natural Language Processing

1. INTRODUCTION

Shopping has long been considered as refreshment by many. Shopping online became a recreational activity of life. The reason of developing web based online shopping system are many everyone walking down the street for shopping has some difficulties. Also some people are so much busy and not able to go out for shopping, Some don't like to shop in crowd. Online shopping system is a virtual store on Internet where customer can browse the product and select the product of interest.

Negotiation is a combination of both, linguistic and reasoning problems. Negotiation is the process of exchange the highest likelihood of satisfying the needs of both parties. Negotiation covers many aspects of our lives have led to extensive research in the area of automated negotiators [2]. The E-Negotiator Chatbot helps the user to solve query and provide negotiation mode is dissatisfied with the price. Such system will help the users to freely interact with the software and upload their product related queries and budget and get the response related to

the query. Just like retail and logistics companies use data to plot the most efficient route to deliver goods.

Negotiation is a combination of both, linguistic and reasoning problems. It requires an intention for something which needs to be verbalized. Dialogue rollout is a concept defined by FAIR researchers for developing long term planning dialogue agents. Chatbots can solve most of the customer queries without the interference of customer executives. Thus, if a chatbot is able to implement negotiation then e-commerce websites will attract a lot of new consumers because of the features.

In this paper a chatter bot or chatbot aims to make a conversation between both human and machine and design and development of an intelligent voice recognition chatbot for e negotiation.

2. OBJECTIVE OF THE PROPOSED SYSTEM

E-commerce websites has been developed and act as emerging technique in this current world. People made their purchasing after the introduction the e-commerce websites in efficient manner. But while come in to an online purchasing the quality and price of the product is very important. Even though things we want are getting easier, still all people are very conscious in quality and rate of the particular product. Having a best price which is not a fixed one will increase the payoff among sellers and buyers. Thus an automated agent for negotiation has been designed in order to maintain a flexible and considerable price instead of fixed price. Chat-bots are mainly used to provide conversation between both human and machine. Admin feed some knowledge to the machine so that machine can identify the sentences and taking a decision itself as response to answer a question.

3. RELATED WORK

Solomon, 1998 in his study "Consumer behavior is the study of the processes involved when an individual selects, purchases, uses or disposes of products, services, ideas, or

experiences to satisfy needs and desires". In view for the Internet to spread out as a retail channel, it is imperative to realize the consumer's mind-set, intention and conduct in light of the online buying practice: i.e., why they employ or falter to use it for purchasing? Consumer attitudes seem to have a significant influence on this decision.

A chatbot for selling physical and digital goods was introduced by Amir Reza Asadi [4]. This chatbot is implemented for telegram and uses its API. This chatbot is basically designed for order taking with minimal user input and suggested for target markets that costumers have little knowledge of about it. [5] Presents brief review of applications that are used AIML chatbot for their conversational service. These applications are related to cultural heritage, e-learning, e-government, web base model, dialog model, semantic analysis framework, interaction framework, humorist expert, network management and adaptive modular architecture. Such application an help to the peoples providing useful services but also interact with customers and provide solution of their queries through AIML chatbot instead of human beings.

Schiffman, Scherman, & Long, 2003 in his study researched that "yet individual attitudes do not, by themselves, influence one's intention and/or behavior. Instead that intention or behavior is a result of a variety of attitudes that the consumer has about a variety of issues relevant to the situation at hand, in this case online buying. Over time the Internet buyer, once considered the innovator or early adopter, has changed. While once young, professional males with higher educational levels, incomes, tolerance for risk, social status and a lower dependence on the mass media or the need to patronize established retail channels.

The work of Kim and Park (2005) using U.S. Samples suggests that their positive attitudes as well as willingness to search for pre-purchase information leads to a strong likelihood that they will buy online. Online shoppers, are required to have computer skills in order to use the Internet for shopping. Hence, those who are not comfortable with using the computer, will likely do their shopping at the traditional store, modern shop, or discount

store because it will be faster shopping there than in the Internet shop.

Goldsmith and Flynn (2004) state that the home catalog is another traditional selling channel where people can shop at home because of the varieties of products offered in the catalog. They can order through the phone or by mail. It is convenient except that they are not able to touch and feel products before purchasing.

KBAgent [7] More recent applications include i.e. negotiation history from other users will be used as knowledge based for general modeling which will be used while negotiating by the automated negotiating agent. Experiments conducted with people show that the KB Agent negotiates efficiently with people and even achieves better utility values than another automated negotiator, shown to be efficient in negotiations with people. The paper gives general opponent modeling and proposing offers using a concession method and accepting offers using a sophisticated threshold. The paper shows that KB Agent can achieve significantly higher utility values than the human players.

According to Zhou et al. (2007) it is the customer's probability that shopping online would increase his/her efficiency and this positively affect the entire purchase process. Bhattacharjee, (2001) says that customer prefer to acquire a product when such usage is perceived to be useful.

4. PROPOSED SYSTEM

Description: -The figure shows the architecture of the proposed system. Firstly, the system can load the data having questionnaires dataset related to the welcome messages, negotiation messages. While using the system user needs to ask a query. Then by using the tag word from the query system gives the response with the help of Natural Language Processing. If the user is not satisfied with the production budget then the user selects a product and starts a discussion on negotiation on the product with a chatbot.

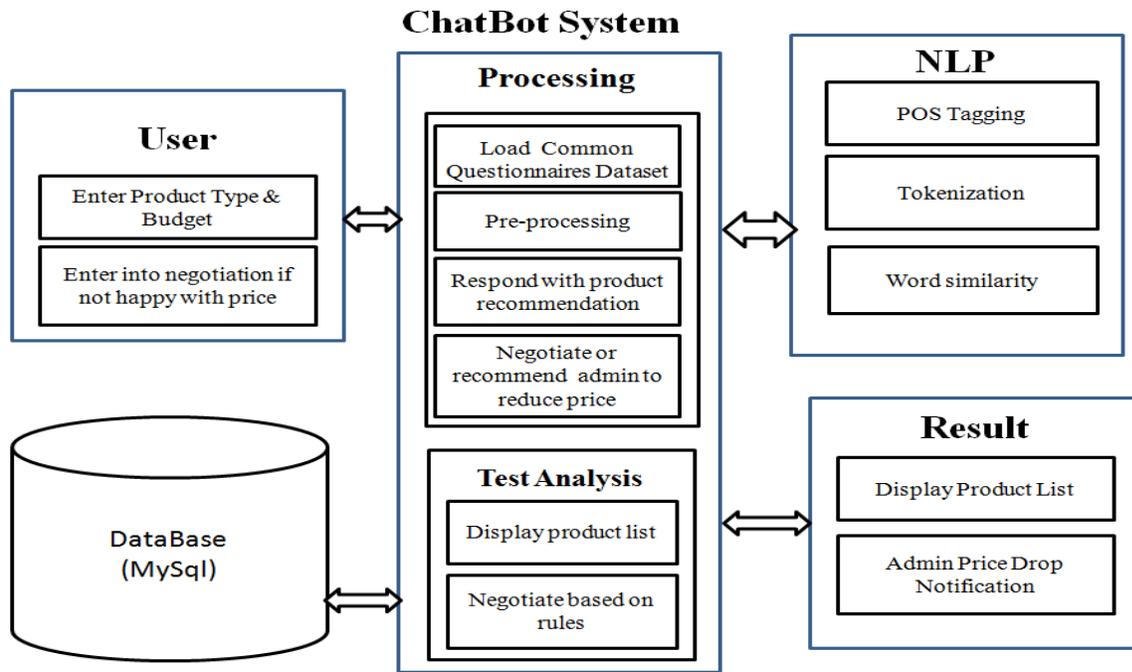


Fig -1: System Architecture

Whenever the user uses the system, initially they need to mention their query. From the query the system can extract the tag word. And then according to the question tag system gives the response to user. The system can give the response to the user product queries. User has to type the product type and budget. The chatbot will search the most appropriate products as per user’s budget. Once the products are found matching to users search queries, then the list is returned. User selects a product and starts discussion on the product with chatbot. The agent begins by proposing a full offer, FA, as its anchor. FA is chosen by selecting the values for the highest value within the agents search cluster. It then takes offer from user and compares it with the minimum price. If it is greater than the minimum price then it accepts the deal else it uses the negotiation formula to offer a new reduced price to the user. If new reduced price is less than the minimum value then the chatbot offers the minimum value to the customer which he can accept or reject.

If the customer is satisfied with the value which was given by chatbot after performing negotiation formula then the product is sell else if the customer is not satisfied with bot price the discussion stop and customer can search for new product.

5. ALGORITHM COMPARISON

The performance given by selected algorithms in past for chatbot communication using svm(support vector machine),word matching algorithm is shown in below graph.

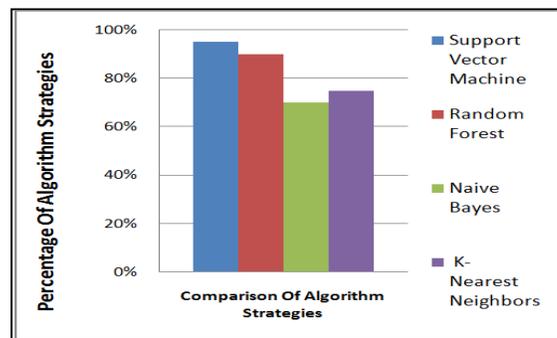


Chart -1: Algorithm accuracy comparison

In the above figure we compare different algorithms on the basis of there performance, accuracy. We are using support vector machine technique for classification which give better result then the others. Which is also accurate and also execution time of machine learning algorithm is better as compare to other.

