

Price Negotiating Chatbot with Text & Voice on E-commerce website

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ABSTRACT:

In recent years online shopping has gained a huge boom. With this increase, most of the features of online shopping are developed but some features like negotiating with shopkeepers are not available which is sometimes possible in offline purchasing. We have implemented a chatbot for negotiating on the products. The chatbot interacts with customers and assists them to get a satisfactory price on product(s). With such a system, which impacts on major areas of online shopping there are possibilities in which either the seller of the product or customer's budget gets compromised. To avoid such situations we have developed an algorithm which works along with prediction of old available data to provide a price. Price prediction has less accuracy at times because either irrelevant features/attributes of data are used or some algorithms are not suitable for a particular dataset. Due to this, Ecommerce business does not directly rely on price prediction systems since even a wrong prediction of a single product can result in business losses. Some models also fail when data scales or some feature is unavailable after time on which model prediction was dependent. Then those changes are to be managed to maintain the accuracy and reliability of the model. In our chatbot system we have tried to resolve some of such issues.

INTRODUCTION :

E-commerce websites today apply various AI techniques to determine most liked products or most sold products which eventually are calculated to provide an effortless search for customers shopping on their website. But at times when the best products are sold at high prices, customers have to compromise on their product. There are also some other problems that customers may face on low cost products. These problems can be eliminated

by giving them an opportunity to negotiate on the products. Negotiation is a combination of both linguistic and reasoning problems. Negotiation is the process of exchanging the highest likelihood of satisfying the needs of both parties [3]. The first party i.e. product seller will provide a minimum price along with the product data that he/she can afford to sell the product at. This price and the product price before negotiation (original price) are the limits for our algorithm

LITERATURE SURVEY:**Artificial Intelligence Based Price
Negotiating E- commerce Chat Bot System****AUTHOR:****A. Porselvi, Pradeep Kumar A.V
Hemakumar S.Manoj Kumar****ABSTRACT:**

the features of online shopping are developed but some features like negotiating with shopkeepers are not available which is sometimes possible in offline purchasing. We have implemented a chatbot for negotiating on the products. The chatbot interacts with customers and assists them to get a satisfactory price on product(s). With such a system, which impacts on major areas of online shopping there are possibilities in which either the seller of the product or customer's budget gets compromised. To avoid such situations we have developed an algorithm which works along with prediction of old available data to provide a price. Price prediction has less accuracy at times because either irrelevant features/attributes of data are used or some algorithms are not suitable for a particular dataset. Due to this, Ecommerce business does not directly rely on price prediction systems since even a wrong prediction of a single product can result in business losses.

TITLE :**Negotiation Assistant Bot of Pricing
Prediction Based on Machine Learning****AUTHORS :****Tingwei Liu, Zheng Zheng****ABSTRACT:**

Artificial intelligence (AI) has been used to develop and advance numerous fields and

industries, including finance, healthcare, education, transportation and more. However, in the business negotiation field, such as bargain, the AI has not yet exerted its power. In order to explore the application of AI into business negotiation, we have built an intelligent robot that can help customers that lack negotiation skills when bargaining in their shopping sceneries. This bot can make decision by itself via price prediction function implemented by machine learning algorithms and the tool of decision tree. As a result, our bot has got a positive performance during a used car trade. Although the algorithm of the project is relatively simple, its main contribution is to show the potential application of AI in the business negotiation. We believe that it can provide ideas and directions for the future development of business negotiation robot

EXISTING SYSTEM:

“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” [3]. Which is true and many companies have engaged themselves in understanding consumer's behavior to get the most profitable techniques with customer's satisfaction. In 2017, Facebook's FAIR (Facebook Artificial Intelligence Research) group along with Georgia Institute of Technology trained bots over 5000+ negotiation datasets. When they trained their bots to respond based on human likelihood, they resulted to be “overly willing to compromise”. When they were trained again with analyzing the human agent's

belief, it was found that most of the replies of bots were false. The most widely used algorithm for this purpose is SVM (Support Vector Machine). This algorithm acknowledges the presence of non-linearity in the data and provides a proficient prediction model.

DISADVANTAGES OF EXISTING SYSTEM :

- 1) Less accuracy
- 2)low Efficiency

PROPOSED SYSTEM :

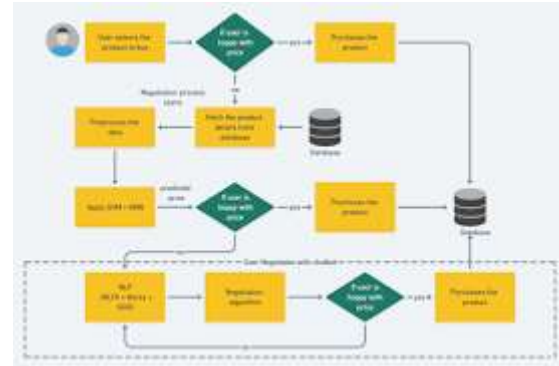
the dataset of e-commerce items containing the price of products and their minimum prices i.e min price which will be used for negotiating. The website for demonstrating the working is made upon HTML, CSS, JavaScript for front end while the backend uses Flask. Database is made by mariadb. In an E-commerce website the customers select the product(s) that they wish to buy, then they proceed with ordering the product(s). On our website we have added the chatbot where they purchase the product by placing a button to negotiate. The offer price will be then stored when they are satisfied. They can select whether they want to buy that product or add the product to cart and see for another product(s). Customers judge the products on E-commerce websites by various factors such as ratings, price, reviews, etc. But for some customers, price plays a crucial role in the decision for purchasing a product

ADVANTAGES OF PROPOSED SYSTEM :

- 1) High accuracy

- 2)High efficiency

SYSTEM ARCHITECTURE :



IMPLEMENTATION:

MODULES:

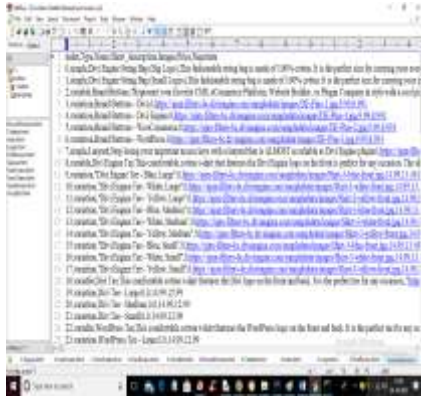
- Browse products
- View oder
- Chat bot
- Post review
- Logout

SCREENSHOTS :

In this project we have designed E-commerce application where user can browse products list and then select Chatbot as Text or Voice and then negotiate with Chatbot. Chatbot will understand two types of voice command such as ‘first price’ which will give reasonable price to the customer and if customer not satisfy then it will ask for ‘final price’ and then Chatbot will add another 10% discount as final price and then serve to customer.

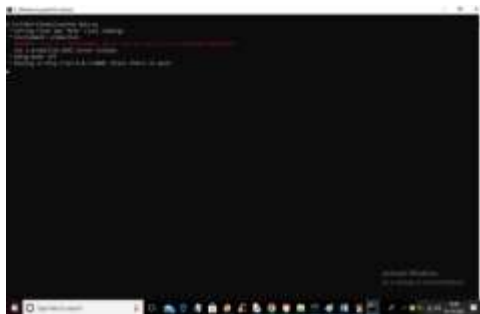
If say another word other than ‘first price’ or ‘final price’ then Chatbot will give error.

To display list of products we are using below dataset which contains list of products and prices



in above dataset we have list of products and its images and in last column we have Actual Price and negotiable price and using this list we will serve products to customers and Chatbot will use above dataset to get actual price and negotiable prices.

To run project double click on 'run.bat' file to get below screen



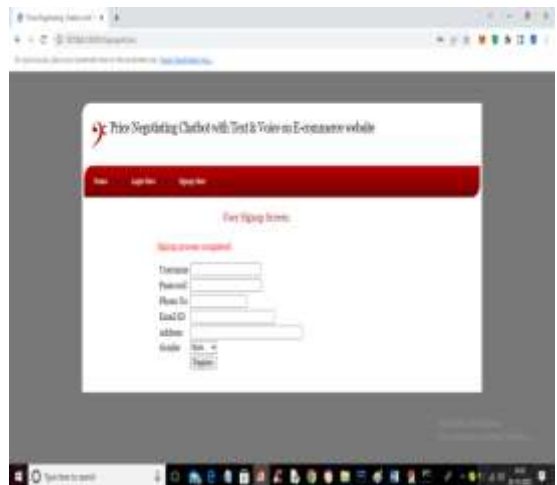
In above screen python Webserver started and now open browser and enter URL as 'http://127.0.0.1:5000/index' and press enter key to get below page



In above screen click on 'Sign Up Here' link to get below screen



In above screen user is entering signup details and then click on 'Register' button to complete signup and get below output



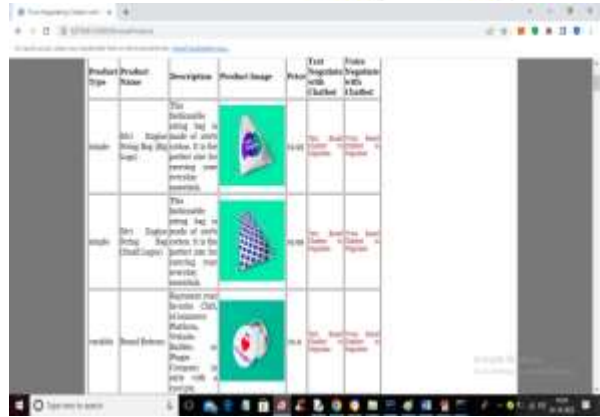
In above screen signup process completed and now click on ‘Login Here’ link to login as user



In above screen user is login and after login will get below screen



In above screen user can click on ‘Browse Products’ link to get list of products



In above screen user can see list of products with actual prices and have red colour links to chat with Chatbot using text and voice and now I will click on ‘Text Chatbot Negotiate’ link to chat with text like below screen



In above screen Chatbot displaying current product price in text field user will enter some text and press ‘Send Your Message’ button to get output from Chatbot



In above screen in text field I entered text as 'first price' and then press button to get below output



In above screen for final price Chatbot offer 17.09 and now if customer satisfy then click on 'Purchase Product' button to confirm order and get below output



In above screen from Chatbot we got negotiate price as 17.99 from actual price 19.99 and now ask for final price and get below output

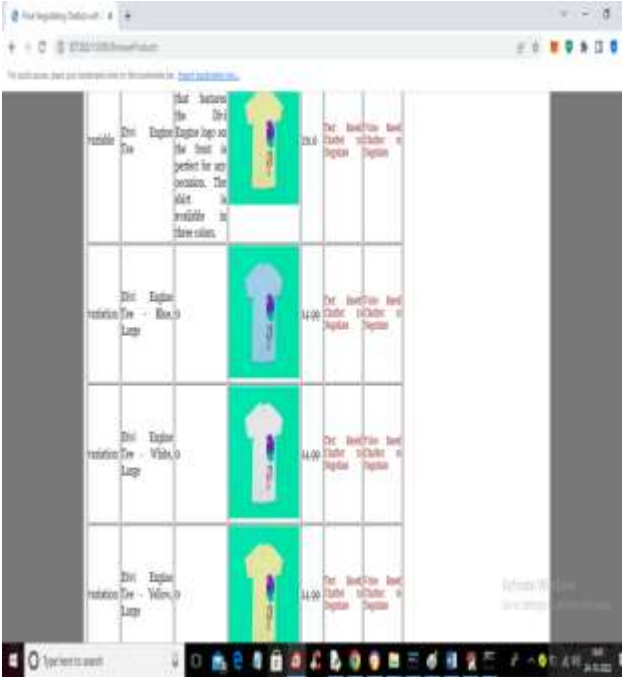


In above screen order is completed and now click on 'View Orders' link to view order

In above screen now user can click on ‘Voice Based Chatbot to Negotiate’ link to get below screen



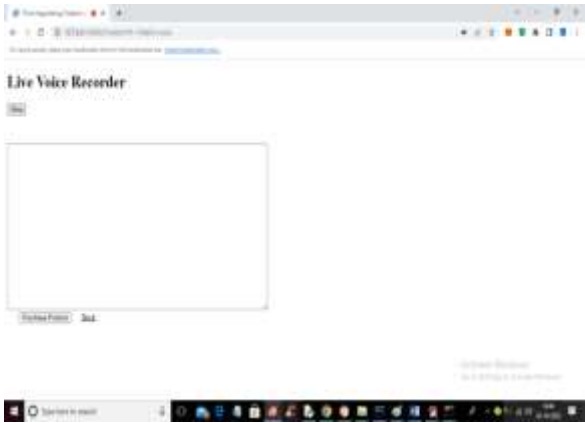
In above screen user can view his past order and now click on ‘Browse Products’ to view list of products and then Chat with Chatbot using Voice



In above screen click on ‘Get Microphone’ button to connect to microphone and get below output



Now in above screen microphone connected and now click on ‘Recorder’ to record voice and then click on ‘Stop’ button to complete recording and send voice to Chatbot and get output



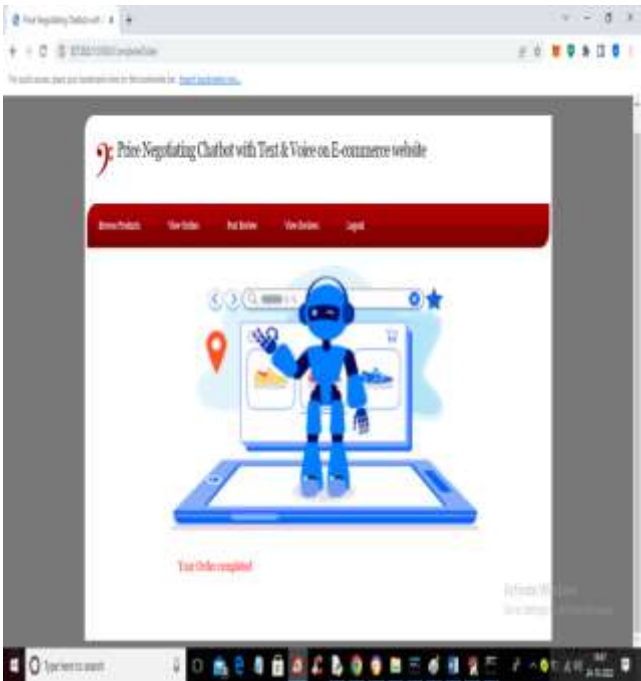
In above screen after recording click on 'Stop' button to complete recording and get below output



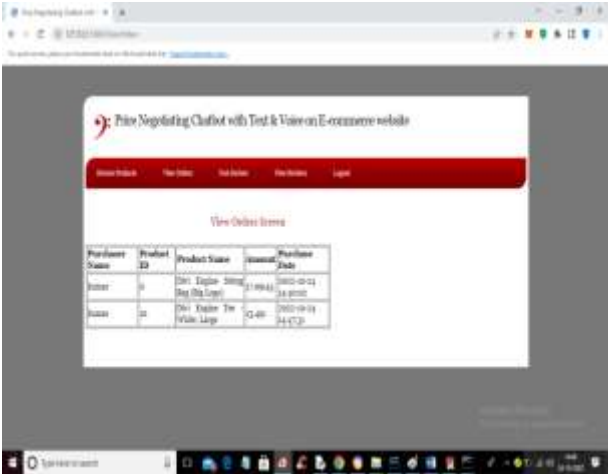
In above screen Chatbot saying 'sorry not trained' and now we will try again



In above screen Chatbot understand query and then in blue colour text we can see output of Chatbot with negotiate price and now click on 'Purchase Product' button to confirm order and get below output



In above screen order is confirmed and now click on 'View Orders' link to get below output



In above screen we can see the confirmed orders from user and now click on 'Post Review' link to get below output



In above screen I entered some review and then click on 'Submit' button to get below output



In above screen in red colour text we can see user review predicted as 'Negative' and now click on 'View Reviews' link to get below output



In above screen all users can view all reviews and their sentiments.

Similarly you can signup, login and view products list and negotiate with Chatbot using text and voice

CONCLUSION:

The negotiation on products is a challenging task when it comes to e-commerce systems. We tried a primary chatbot that covers many aspects and cases for negotiation but is not evident to provide the best results. □ The chatbot which we created sometimes falls to the price customers ask for though it is always greater than minimum price but may result in loss for seller if it goes the same for many customers. Such situations have to be handled. □ We used various algorithms such as SVM, KNN but in future there may be some better price prediction algorithms which can be used the ways in which a user can better negotiate with chatbot and get cheaper prices. Such cases should be handled. □ KBAgent is considered to be better when it comes to negotiation, this can be added to our application. An example can be Apple's Siri which has huge knowledge base to provide satisfactory outcomes.

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