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ShopAssistAI

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Abstract: ***E-commerce sites are constantly searching for fresh and inventive approaches to boost customer satisfaction and engagement. Including chatbots with the ability to haggle with clients at no cost is a viable strategy. A detailed review of earlier research on chatbots used in e-commerce pricing negotiations is given in this study. We look at a variety of aspects, including the look, feel, effectiveness, and user experience of these chatbots. We also discuss the underlying technologies machine learning and natural language processing (NLP) that were utilized in the creation of these systems. We also highlight areas of possible interest and challenge for future research and development in this developing field. Our synthesis aims to provide practical advice for scholars, business experts, and organizations wishing to enhance the e-commerce experience through the usage of price negotiation chatbots.***
Keywords: Pricing negotiation, Chatbots, E-commerce, Natural Language Processing (NLP).

I. INTRODUCTION

Businesses in the dynamic realm of Internet retail are constantly seeking fresh and inventive approaches to engage with their customers and earn their trust.

An increasingly common strategy is one such integrated method. of price-negotiating chatbots, which are upending traditional retail by facilitating interactive interactions between online merchants and customers. With the help of these chatbots, customers can negotiate rates on a personalized and interactive platform that replicates the in-person sales experience online. For processing, they made use of advances in natural language processing (NLP) and artificial intelligence (AI).

II. LITERATURE SURVEY

A. Price Negotiation Chatbot on E-Commerce Website Using NPL – Typeset.io (2023)

To improve customers' buying experiences, the study suggests creating a chatbot that negotiates prices on e-commerce websites by utilizing Natural Language Processing (NLP) technology. It describes the chatbot's design in detail, covering its user interface, negotiating module, price prediction module, and NLP module. hand movements are recorded using a three-axis accelerometer. A microcontroller can receive information wirelessly fromany frame of association. At that stage, the received signals are converted into one of six orders for car-robot navigational control.

B. Product Negotiation in E-Commerce Website using Chatbot Palleti Divya Sree, Manohar Raj Kokkiligadda, Jagannadham Teja, Yelisetti Sandeep (2023)

The application of a chatbot system for product negotiation in e-commerce websites is examined in this study, with an emphasis on producing responses in response to user interactions.

C. E-commerce Price Negotiator Chatbot Abhijit Chaudhari, Rushikesh Jadhav, Jatin Kharat, Prof. Ulka M. Shirole(2022)

To improve customers' buying experiences, the study suggests creating a chatbot that negotiates prices on e-commerce websites by utilizing Natural Language Processing (NLP) technology. It describes the chatbot's design in detail, covering its user interface, negotiating module, price prediction module, and NLP module.

D. E-Commerce Chatbot for Price Negotiation International Research Journal of Modernization in Engineering Technology and Science (IRJMETS) – 2021

To improve user experience and provide a forum for interactive pricing negotiations between buyers and sellers, this research paper presents an ecommerce chatbot that is specifically made for price negotiation. It goes into depth about how users can interact with the chatbot to negotiate prices.

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III. EXISITING SYSTEM

In the early days of robotics, robots were controlled by cables. This served as the robot's physical link to the Stoner control. The cable's length determines the range. To counter this flaw, a wireless connection is established.

With the use of a wireless link and a remote control, the robot is operated. The robot and control panel must be in lineof sight since this technology uses infrared transmission. Following remote control, gesture recognition and an image captive system will be implemented. Initially, commandswere sent by hand between humans and Stoner, who then recorded them using the camera. This allowed for the reuse of the robot's camera photos and their transfer to Stoner. If the image has previously been registered in the library, the robot will receive the command; if the optimized libraryoffers a relief command, the robot will be admired and receive the command. Having a real library of hand gestures isthe most challenging aspect of this idea.

IV. IMPLEMENTATION

A. Creation of the Prototype

Begin by developing a functional prototype of the pricing negotiation chatbot utilizing relevant technologies such as natural language processing (NLP) and machine learning (ML). Incorporate features such as user authentication, product catalog integration, and real-time pricing adjustments from backend systems.

B. User Input and Evaluation

Conduct user testing sessions to get feedback on the effectiveness, usefulness, and functioning of the pricing negotiation chatbot. Iterate the prototype based on user feedback, refining iterations to solve usability issues and enhance the user experience in general.

C. Data Collection and Analysis

Install the chatbot for pricing negotiations on an e-commerce site and gather information on user interactions, such as attempts at negotiation, the results of those attempts, and the satisfaction levels of users. Examine the gathered information to determine.

D. Performance Evaluation

Analyze how well the chatbot negotiates prices based on key performance indicators (KPIs) like conversion rates, average order value (AOV), and customer satisfaction ratings. Compare the performance of the chatbot enabled e-commerce platform with historical data or control groups to evaluate the impact of the chatbot on business outcomes.

E. Validation and Dissemination

Confirm the study's findings and implications by validation from industry experts, peer review, or comparison with other e-commerce platforms. Disseminate the research findings through academic publications and commercial exhibitions to the broader ecommerce community. Discussion forums on the internet. By following these implementation methods, researchers can efficiently develop, evaluate, and disseminate their study on e-commerce pricing negotiation chatbots. This will broaden the field's comprehension and help with the development of upcoming chatbot enabled e-commerce platforms.

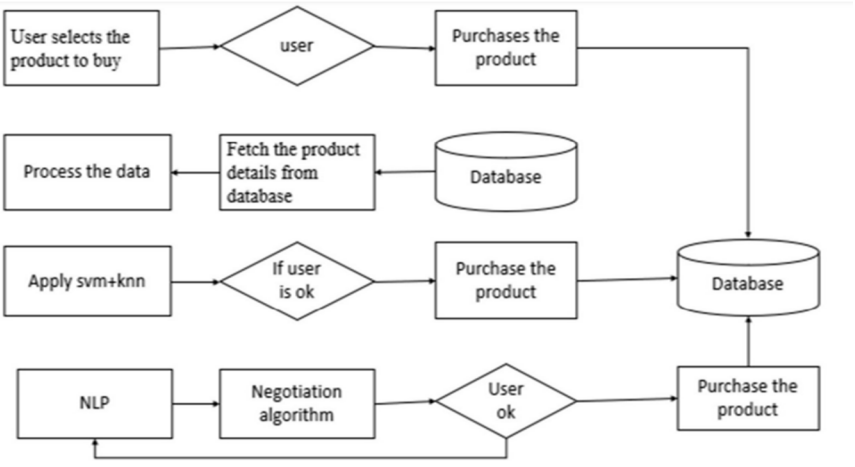


Fig1: Workflow diagram of price negotiation chatbot

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V. METHODOLOGY

The following procedures are involved in the implementation of a price-negotiation chatbot on an ecommerce website:

1) *Creating the User Interface:* Customers should be able to engage with the chatbot easily and intuitively thanks to the user interface. Customers should be able to browse product details, conduct pricing negotiations, and make payments through these alternatives.
2) *Integrating Natural Language Processing (NLP) and Machine Learning:* NLP techniques should be used in the chatbot's programming to precisely read user input and provide natural language responses. Over time, the chatbot's negotiating abilities can be enhanced by machine learning algorithms, which can learn from client interactions and adjust to various bargaining settings.
3) *Implementing the Negotiation Module:* The negotiation module should facilitate logical negotiation options based on user preferences. It should support decision analysis and multi attribute utility theory to maximize gains for both
4) *Secure Payment Processing:* After a successful transaction, the system ought to enable email confirmations and secure payment processing, including credit card payments.
5) *Integration with Current E-Commerce Platform:* By integrating the chatbot with the current ecommerce platform, clients will be able to haggle over prices and make payments from the same interface.

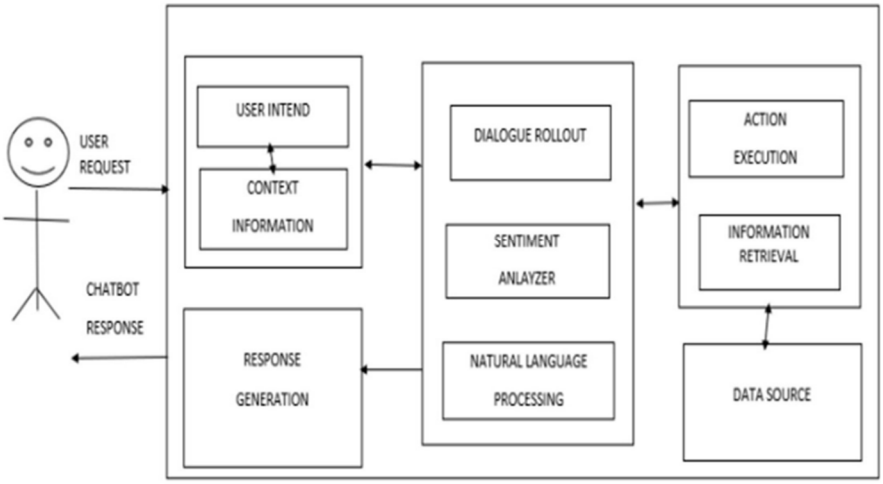


Fig2: System Architecture

VI. RESUITS

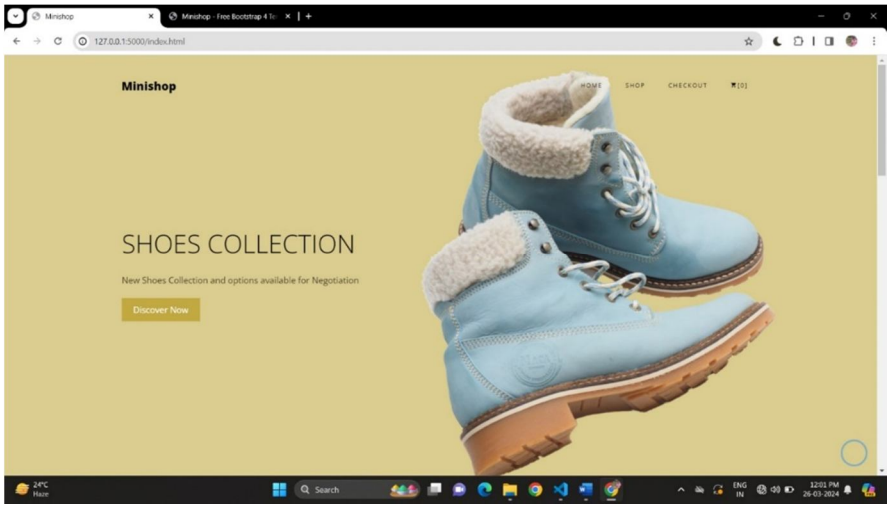


Fig3: Home Page

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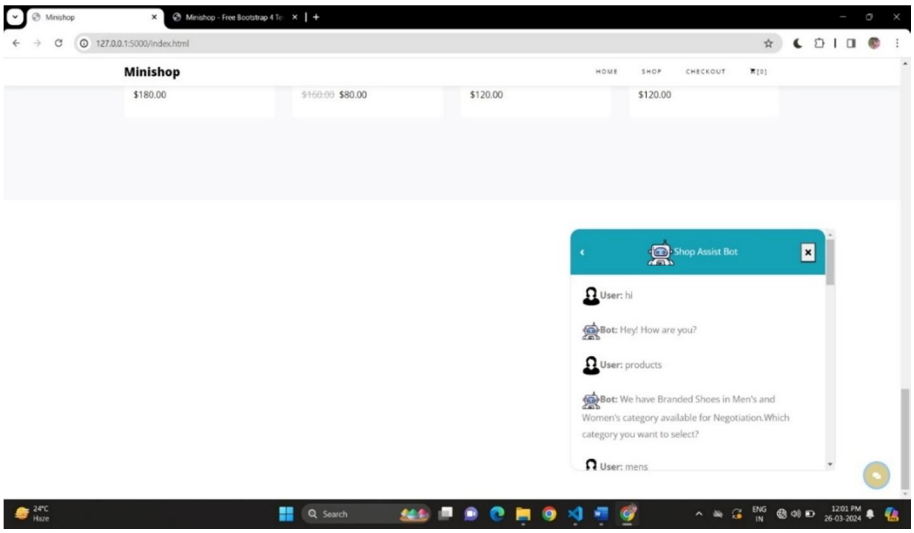


Fig3: Negotiating Price

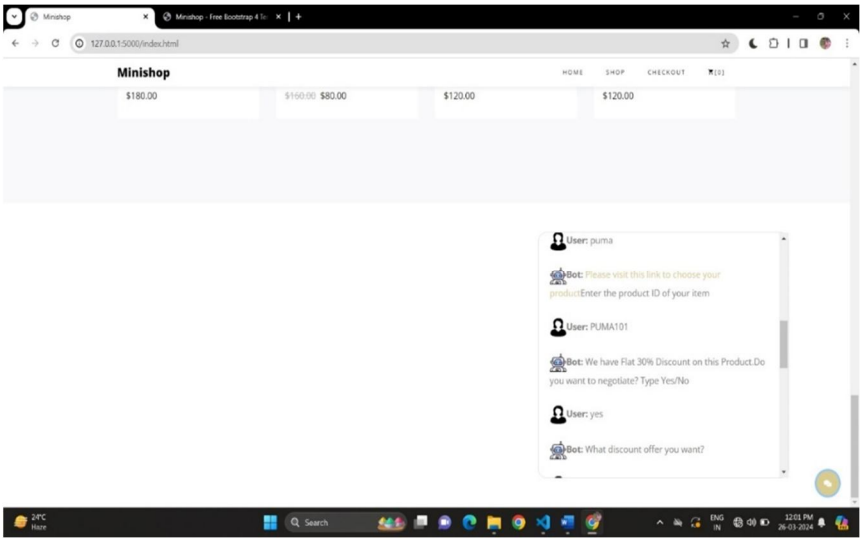


Fig4: Negotiating Price

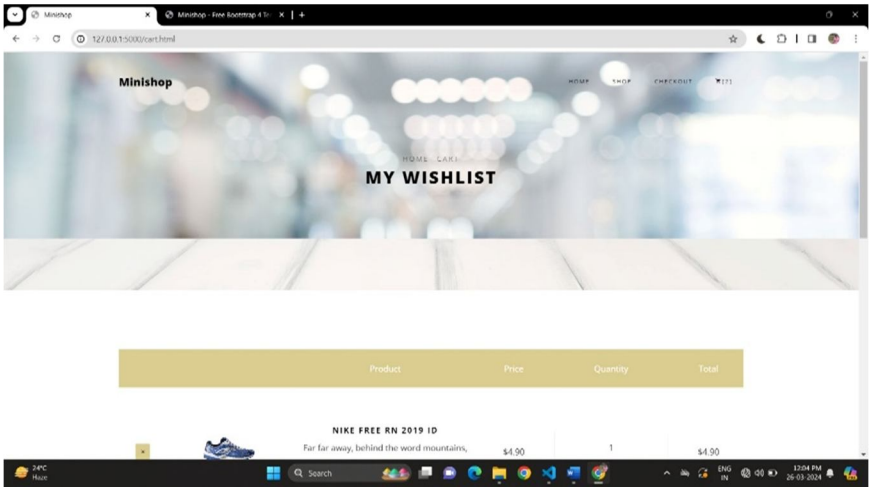


Fig5: Wishlist Page

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VII. CONCLUSION

We've reached several project milestones with success. We included user-friendly navigation, an intuitive design, and robust backend capabilities to ensure smooth transactions and interactions. Our platform's dependability and credibility have grown as a result of integrating secure payment methods, assuring consumers that their data is secured.

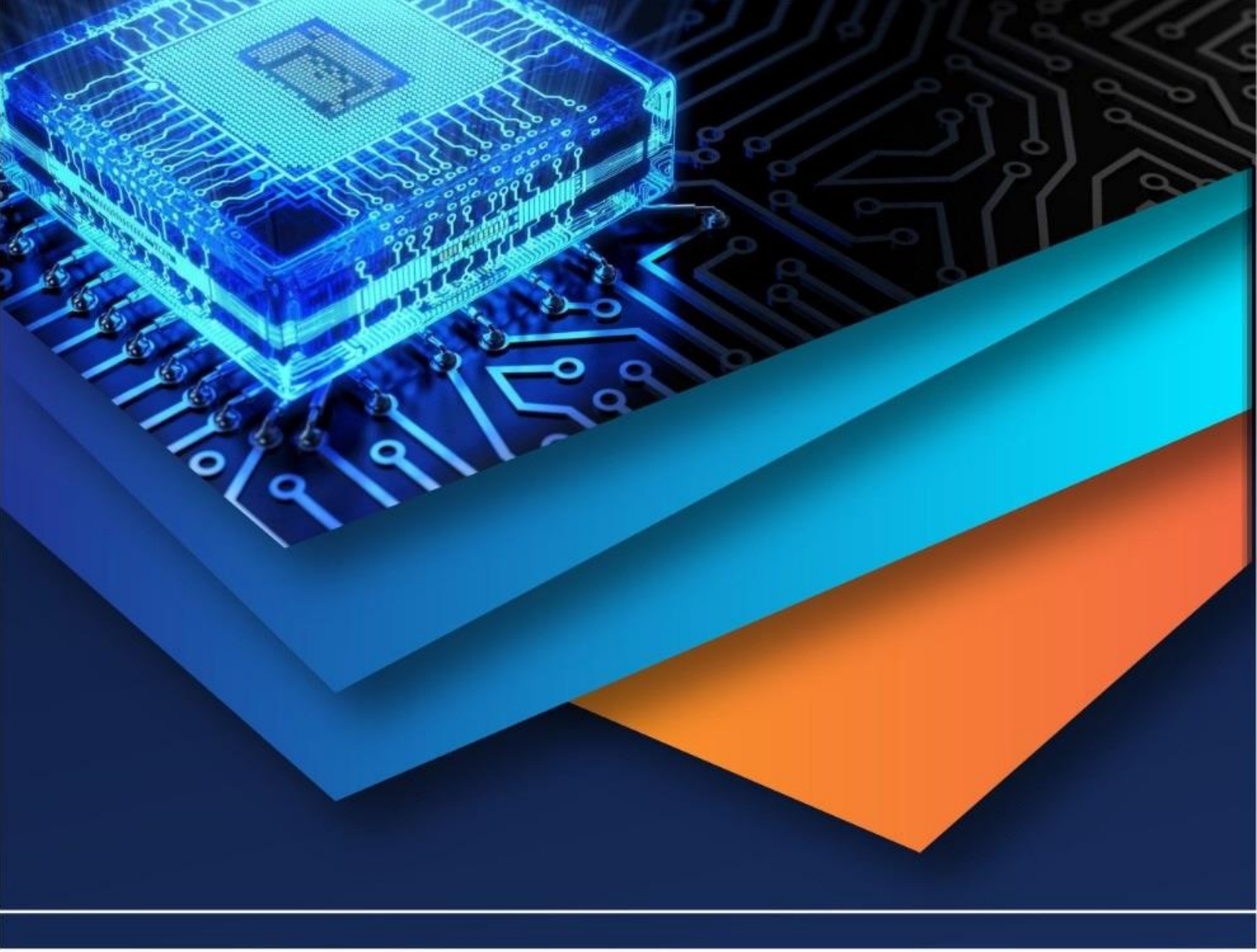
VIII. FUTURE SCOPE

Exploration of state-of-the-art AI techniques, including deep reinforcement learning, to enhance chatbot negotiation strategies. combining video and audio with other multimodal communication channels to create interactions that are more intuitive and reasonable. investigating the application of blockchain technology to provide security and openness in dealings, such as talks over prices. development of personalized pricing models based on each customer's preferences and historical purchase behavior. Conducting a cross-platform compatibility analysis is crucial for enabling the seamless integration of chatbots across various e-commerce platforms and devices. Examining the moral issues related to algorithmic pricing and bargaining strategies to maintain equity and customer confidence. Investigation of hybrid chatbot-human systems, in which human agents step in to mediate disputes when needed in delicate or complicated situations. investigation into the application of sentiment analysis and emotion identification to customize negotiation tactics according to the attitude and mood of the client. Assessment of long-term customer engagement and retention tactics enabled by chatbots for pricing negotiating. Examination of the possible effects of consumer protection legislation and regulatory frameworks on the implementation and functioning of price negotiation chatbots in online retail.

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