AI Infused E-Commerce Website for Artisans

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Abstract: *This paper describes a website based chatbot. This chatbot can make it easier to interact with the website. The bot understands and converses with the user in Simple Language. This chatbot is linked to an e-commerce website. This website has a variety of products with different features. The chatbot helps you to make a decision which product is suitable for you. This is especially helpful when you have not narrowed down the criteria for the product. Its functions basically like an online automated assistant. This paper presents a novel approach to e-commerce tailored specifically for artisans and craftspeople, integrating advanced artificial intelligence (AI) capabilities to create a seamless, personalized, and efficient marketplace. Our AI-infused e-commerce platform aims to bridge the gap between traditional craftsmanship and modern digital commerce, offering artisans a unique space to showcase their work and connect with a global audience. Key features of the platform include intelligent product recommendations, personalized marketing, automated inventory management, and AI-assisted customer support. By leveraging machine learning algorithms, we enable a dynamic user experience where customers receive tailored product suggestions based on their browsing and purchase history, leading to increased engagement and sales. The platform's AI-powered marketing tools help artisans optimize their reach through targeted campaigns and personalized content.*

Keywords: Large Language Model (llama2 model), Langchain and Streamlit

I. INTRODUCTION

Echnology's Role in Everyday Life: Technology has permeated every aspect of our lives, impacting how we communicate, work, and shop. E-commerce, as a byproduct of technological growth, plays a pivotal role in modern business.

Smartphone Communication: Most people today own smartphones equipped with quick messaging and networking applications. This allows for seamless communication between sellers and buyers, streamlining the customer service process.

Chatbots as a Communication Tool: A chatbot is a software application that uses quick messaging as the primary interface, allowing customers to interact with it similarly to how they would with other contacts on their messaging apps. Chatbots can understand context and deliver appropriate responses, bridging the gap between human-to-human interaction and human-computer interaction (HCI).

Chat Commerce and Conversational Commerce: These terms refer to the use of chat, text, and other natural language frameworks for communication with individuals, brands, or services. It encompasses interactions with both humans and bots, providing asynchronous messaging that facilitates conversational commerce.

Impact on Conversion Rates: The average conversion rate on e-commerce websites is generally low, often around 1%. Chatbots can increase conversion rates by engaging with leads through proactive communication, offering assistance, or answering questions, which can nudge potential customers toward completing a purchase.

AI Chatbots and Learning: Unlike traditional chatbots with a limited set of pre-programmed responses, AI chatbots can understand language contextually and learn from user inputs. They adapt and improve over time by identifying patterns and gaining experience from new situations.

Potential Applications of AI Chatbots: AI chatbots can be used for a variety of commercial purposes, including sentiment analysis, predicting customer needs, and offering personalized recommendations. They can also provide a

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more robust customer support experience by responding to user requests with information from a comprehensive knowledge base.

Efficiency in Chatbot Development: Building AI chatbots involves several processes, including data parsing, data crawling, and pattern matching. Some approaches focus on reducing computational time by streamlining these processes without compromising chatbot effectiveness.

II. PROPOSED SYSTEM

Our online platform connects rural artisans, particularly pottery makers, with a global market, providing them with a space to showcase and sell their traditional crafts. Each artisan has a dedicated profile where they can share their story and the cultural significance of their products, creating a personal connection with customers. Customers can also customize products to suit their preferences, enhancing the unique and artisanal nature of each purchase. The platform prioritizes fair trade practices, ensuring artisans are fairly compensated through transparent pricing. Cultural education is a key aspect, with educational content that enriches the customer experience by highlighting the history and tradition behind each craft. We partner with NGOs and cultural institutions to support economic sustainability and preserve cultural heritage, offering artisans resources, training, and a broader network. Our commitment to sustainability includes promoting eco-friendly materials, reducing waste, and encouraging sustainable production practices. By combining these features, our platform not only helps artisans thrive economically but also fosters a global appreciation for cultural crafts and supports the preservation of cultural heritage.

III. OVERVIEW OF THE SYSTEM

Our e-commerce website with a built-in chatbot using Large Language Models (LLM) is designed to provide an engaging and efficient shopping experience for customers while streamlining operations for sellers.

The website allows users to browse and purchase products, with a variety of features to enhance usability, such as search functionality, product filters, and secure payment processing.

The integrated chatbot, powered by advanced LLM technology, offers real-time customer support, answering questions, providing product recommendations, and assisting with checkout processes.

This chatbot can understand and respond to natural language queries, making interactions feel more conversational and human-like.

It can also learn from past interactions to improve its responses over time, offering a more personalized experience. The system ensures customer data is kept secure and confidential, maintaining trust and reliability.

With its combination of a user-friendly interface and intelligent chatbot support, this e-commerce platform aims to improve customer satisfaction and boost sales for sellers.

IV. MODULES

User Authentication:

Implementation of secure authentication mechanisms to verify user identities during login. Utilization of encryption techniques and secure protocols to protect user credentials and prevent unauthorized access.Utilization of encryption techniques and secure protocols to protect user credentials and prevent unauthorized access..

User Dashboard:

Artisans use this module to list their products, including details such as descriptions, categories, prices, and images. It facilitates easy management of inventory, allowing artisans to update product information and stock levels. The module supports bulk uploads and edits, making it easier for artisans with many products.

Order Management Module:

This module oversees the entire order lifecycle from the shopping cart to delivery. It includes functionality for adding items to a cart, checkout processes, payment, order confirmation, and shipping management. The module integrates with the Payment and Shipping modules to process transactions and manage logistics.

Payment Module:
It handles all payment transactions within the app, supporting multiple payment methods (credit/debit cards, online wallets, etc.). The module securely processes payments, manages transaction records, and handles refunds, ensuring compliance with financial regulations and security standards.

Personalized Data Storage Management:
Implementation of secure and scalable data storage solutions to manage user data backup, preferences, and interactions. Incorporation of data encryption, access controls, and backup mechanisms to ensure data integrity and confidentiality.

Feedback Dashboard:
Integration of a feedback system allowing users t provide input, suggestions, and rating regarding their experiences with the platform. Analysis of feedback data to identify areas for improvement and enhance user satisfaction.

V. EXPERIMENTAL RESULTS

In our experimental analysis of an e-commerce website with a built-in chatbot, we evaluated the chatbot's impact on customer engagement and conversion rates. The study involved tracking user interactions with the chatbot, analyzing response accuracy, and measuring its effect on sales and customer satisfaction. We observed that customers who engaged with the chatbot were more likely to complete a purchase, with a notable increase in conversion rates compared to users who did not interact with it. The chatbot's ability to quickly answer questions and guide customers through the shopping process contributed to this increase. Additionally, customer feedback indicated high satisfaction with the chatbot's responsiveness and helpfulness. The analysis also highlighted areas for improvement, such as refining the chatbot's understanding of complex queries and enhancing its ability to handle a wider range of customer requests. Overall, the experiment demonstrated that a well-implemented chatbot can positively influence user experience and sales outcomes in an e-commerce setting.

VI. CONCLUSION

In conclusion, the experimental analysis of our e-commerce website with a built-in chatbot demonstrates the significant benefits of incorporating chatbot technology into online shopping platforms. The data shows that the chatbot positively impacts customer engagement and conversion rates, with users who interacted with the chatbot exhibiting a higher likelihood of completing a purchase. This outcome underscores the chatbot's effectiveness in providing quick responses, guiding customers through the shopping process, and enhancing the overall user experience.

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