E-COMMERCE CHATBOT USING ARTIFICIAL INTELLIGENCE

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Chapter : 1

Introduction

As we know that time is money, and each company needs to deploy an Artificially Intelligent system in order to interact with the customers. The same functionality is served by the Chatbot. It is a human designed but artificially trained system which is used to give an ease to the human interaction. By deploying this Chatbot to the website main purpose served would be to collect the database of maximum customers visiting our website every day. This database thus received would serve as the medium of interaction between the food outlet and the customers.
Customers will also feel convenient in ordering with a more interactive platform rather than manual ordering. Thus, this will lead to generate an enhanced number of customers and thus we could lead to get details example phone number and email id of various customers and directly interact with them with a decreased human assistance.
Keywords: Chatbot, AI-Artificial Intelligence, Machine Learning, Cloud System.

Chapter : 2 Motivation

One possible motivation for using ecommerce chatbots is to improve customer satisfaction and loyalty. Chatbots can provide personalized and convenient service to customers, such as answering FAQs, recommending products, offering discounts, and providing after-sales support. Chatbots can also help customers save time and effort by reducing the need to browse through multiple pages, fill out forms, or wait for human agents. Chatbots can also create a sense of social presence and engagement, which can enhance the customer's trust and emotional connection with the brand. Some examples of ecommerce chatbots are:

- Hootsuite's chatbot, which helps customers learn about the features and benefits of its social media management platform. It also provides tips and best practices for using the platform effectively.

- Matellio's chatbot, which helps customers find the best software solutions for their business needs. It also provides information about the company's services, portfolio, and pricing.

- Jungle Scout's chatbot, which helps customers sell more products on Amazon. It also provides insights and data on product research, keyword research, inventory management, and more.

- Springer's chatbot, which helps customers access and read academic articles and books. It also provides information about the authors, citations, and related publications.

- Capacity's chatbot, which helps customers boost their ecommerce sales with AI and automation. It also provides solutions for lead generation, customer retention, cart abandonment, and more.

Chapter : 3

Literature Survey related to (E-COMMERCE CHATBOT)

SL No.	Paper Title	Authors	Year	Name of Publisher	Technology
1	Chatbot design approaches for fashion E- commerce: an interdisciplinary review	A. R. D. B. Landim, A. M. Pereira, T. Vieira, E. de B. Costa, J. A. B. Moura	02 Nov 2021.	INTERNATIONAL JOURNAL OF FASHION DESIGN, TECHNOLOGY AND EDUCATION	Machine Learning
2	Development of an E-Commerce Chatbot for a University Shopping Mall	: Babak Daneshvar Rouyendegh (B. Erdebilli)	20 March 2021	Hindawi Applied Computational Intelligence and Soft Computing	Python and React.js as the programming languages and MySQL
3	Ontology based Chatbot (For E-commerce Website)	Pranjal Jain Information Technology Dwarkadas J. Sanghvi College of Engineering Mumbai, India	14, January 2018	International Journal of Computer Applications (0975 – 8887)	Natural Language Processing
4	Smart Chatbot System for E-Commerce Assitance based on AIML	Arif Nursetyo, De Rosal Ignatius Moses Setiadi, Egia Rosi Subhiyakto Department of Informatics Engineering, Faculty of Computer Science Dian Nuswantoro University	2018	International Seminar on Research of Information Technology and Intelligent Systems (ISRITI)	Pythan

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5	An E-Commerce Website based Chatbot	Siddharth Gupta#1, Deep Borkar#2, Chevelyn De Mello#3, Saurabh Patil#4	2015	Siddharth Gupta et al, / (IJCSIT) International Journal of Computer Science and Information Technologies	MySQL, PHP.

Literature review

Framework	Pros	Cons
Microsoft Bot Framework	- Supports multiple languages and platforms - Provides various tools and services for chatbot development and deployment - Integrates with Azure Bot Service and other Microsoft products	- Requires Azure subscription and account - May have limited functionality and customization for some scenarios - May have compatibility issues with some chat applications

Framework	Pros	Cons
Dialogflow	- Supports natural language understanding and voice recognition - Provides pre-built agents and intents for common use cases - Integrates with Google Cloud Platform and other Google products	- Requires Google account and billing information - May have limited functionality and customization for some scenarios - May have compatibility issues with some chat applications
IBM Watson	- Supports natural language understanding and voice recognition - Provides various tools and services for chatbot development and deployment - Integrates with IBM Cloud and other IBM products	- Requires IBM account and billing information - May have limited functionality and customization for some scenarios - May have compatibility issues with some chat applications

Framework	Pros	Cons
Rasa	- Open source and customizable - Supports natural language understanding and generation - Provides various tools and services for chatbot development and deployment	- Requires programming knowledge and skills - May have steep learning curve and complexity for some scenarios - May have limited support and documentation

Chapter : 5

Problem formulation/Objectives

The goal of the chatbot: what is the main purpose or function of the chatbot? For example, the goal of an e-commerce chatbot could be to provide customer service, generate leads, drive sales, or increase engagement.

The input of the chatbot: what kind of data or information does the chatbot receive from the user or the environment? For example, the input of an e-commerce chatbot could be text messages, voice commands, images, or user preferences.

The output of the chatbot: what kind of data or information does the chatbot provide to the user or the environment? For example, the output of an e-commerce chatbot could be text messages, voice responses, images, product recommendations, or order confirmations.

Chapter : 6

Methodology/Planning of work

Requirements Analysis:
Identify and document specific user requirements and expectations for the chatbot, including the types of queries it should handle, preferred communication modes (text, voice), and the desired level of emotional engagement.

Advanced NLP Implementation:
Employ state-of-the-art Natural Language Processing (NLP) techniques, such as deep learning models, to enhance the chatbot's language understanding capabilities, enabling it to interpret and respond to complex user queries accurately.

Emotion Recognition Integration:
Incorporate emotion recognition algorithms to enable the chatbot to understand and respond to users' emotional states. This involves analyzing text, voice intonation, and potentially facial expressions for a more empathetic interaction.

Adaptive Learning Mechanism:
Implement machine learning algorithms that allow the chatbot to learn from user interactions over time. This adaptive learning mechanism enhances the chatbot's ability to improve responses, handle evolving scenarios, and personalize interactions based on user preferences.

Multimodal Interaction Design:
Develop a user interface that supports multimodal interactions, allowing users to engage with the chatbot through text, voice, and potentially visual inputs. Ensure a seamless experience across different communication modes to cater to diverse user preferences.

Security Protocols and Human Oversight:

Prioritize the implementation of robust security protocols to protect user data. Additionally, incorporate a "human-in-the-loop" system where human agents can intervene when the chatbot encounters complex or sensitive situations, ensuring a balance between automation and human oversight for enhanced security and user satisfaction.

Chapter : 7

Facilities required for proposed work

A chatbot platform: this is the software that allows you to create, design, and deploy your chatbot. You can choose from various platforms, such as Manychat, Chatfuel, Botsify, or Mobile Monkey. Each platform has its own features, pricing, and integration options. You should select the one that suits your needs and budget.

A natural language processing (NLP) service: this is the technology that enables your chatbot to understand and respond to natural language inputs from your users. You can use an industry standard NLP service, such as Google Dialogflow, IBM Watson, or Microsoft LUIS. Alternatively, you can use a rules-based or hybrid approach, where you define the possible questions and answers that your chatbot can handle.

A web hosting service: this is the service that provides the server space and bandwidth for your chatbot. You can use a cloud-based hosting service, such as Amazon Web Services, Google Cloud Platform, or Microsoft Azure. These services offer high reliability, security, and performance for your chatbot.

A domain name: this is the unique address that identifies your chatbot on the internet. You can use a domain name registrar, such as GoDaddy, Namecheap, or Domain.com, to purchase and manage your domain name.

A content management system (CMS): this is the software that allows you to create, edit, and manage the content of your chatbot. You can use a CMS that is integrated with your chatbot platform, such as Manychat CMS, Chatfuel CMS, or Botsify CMS. Alternatively, you can use a standalone CMS, such as WordPress, Drupal, or Joomla. You should choose a CMS that offers the best functionality, usability, and customization for your chatbot.

Chapter : 8 Bibliography/References

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