International Journal for Modern Trends in Science and Technology, 9(05): 657-659, 2023

ISSN: 2455-3778 online
DOI: https://doi.org/10.46501/IJMTST0905111
Available online at: http://www.ijmtst.com/vol9issue05.html

Design and Development of a Chatbot for Educational Domain

Dr. P Penchalaiah, Ch. Eswar Sai Kumar, G. Sarath Babu, B. Veera Prasad, K. Vamsi, M. Hemanth Kalyan

Department of Comuter Sciecne Engineering, Narayana Engineering College, Nellore, Andhra Pradesh, India

To Cite this Article
Dr. P Penchalaiah, Ch. Eswar Sai Kumar, G. Sarath Babu, B. Veera Prasad, K. Vamsi, M. Hemanth Kalyan. Design and Development of a Chatbot for Educational Domain. International Journal for Modern Trends in Science and Technology 2023, 9(05), pp. 657-659. https://doi.org/10.46501/IJMTST0905111

Article Info
Received: 21 April 2023; Accepted: 18 May 2023; Published: 22 May 2023.

ABSTRACT

In general, websites are having information user searches for the relevant information according to his criteria. User is facing difficulties while retrieving from the website. Although the information is available on the website sometimes it may not visible to the user instantly. With the help of chatbot he can ask his query and get the reply to his query instantly. It gives flexibility to the user whether by his own he can search the data or he can ask through chatbot. The goal of this project is to design and develop a chatbot for the educational domain. The chatbot will be designed to assist students in their learning process, providing them with personalized and interactive support that can help improve their understanding of the subject matter. The chatbot will also provide teachers with valuable insights into their students learning progress, enabling them to tailor their teaching methods to better meet their student's needs. Overall, the goal of this project is to provide students with a more engaging and effective learning experience, while also providing teachers with valuable insights into their students learning progress. By leveraging the power of chatbots and machine learning, we can create a more personalized and interactive learning environment that can help students achieve their full potential

KEYWORDS: Virtual Private Cloud, Java Script Object Notation, Natural Language Processing, PyTorch, Kommunicate

INTRODUCTION

User is facing difficulties while retrieving the information from the website as it lags so much time and effort. Although the information is available on the website sometimes it may not visible to the user, even if you ask in the internet about the particular information it can't assure the accurate information. Here user experience will be ruined, so these chatbot excites the user with their answers for the queries from the user and show the same information in the web application. So, this chatbots make the easier for the user to know the information from the website without navigating the whole website. In general purpose of the website is providing the information but mostly the time is lagging while searching for the information in the websites tough it has the information. So, there is need of the chatbot for websites as we are now doing the chatbot for educational domain.

The development of the chatbot will involve leveraging natural language processing and machine learning techniques to enable the chatbot to understand and respond to students queries in a conversational manner. The chatbot will be designed to be easy to use, with a

user-friendly interface that allows students to quickly and easily access the information they need.

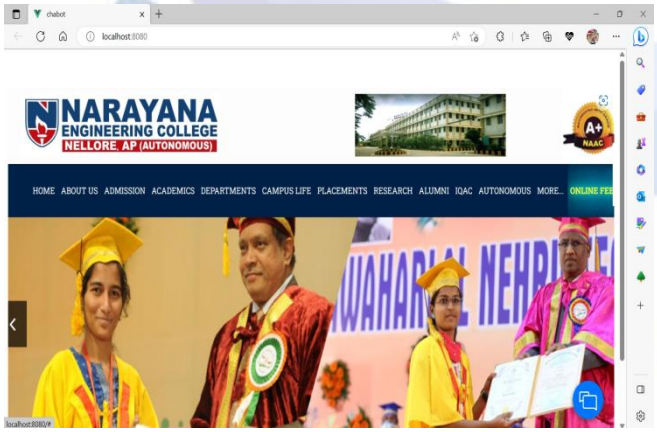
WORKING OF PROJECT

After the preparation of the questions and answers for the chatbot in the JSON format as Intent and extent. So that this JSON file can be given to google cloud platform which uses NLP and chatbot algorithms to create a dedicated API for the chatbot implementation and JSON Key. We give this JSON key to the communicate platform it creates UI (User Interface) and provides a platform to further updates in our chatbot. It provides all in one solution for the user interaction and customer management services So, we got our backend now time to work on the front end we used a VueJS as server so the extension of files will be. Vue on the App.Vue there is a template tag we can give our basic front end at the template tag.

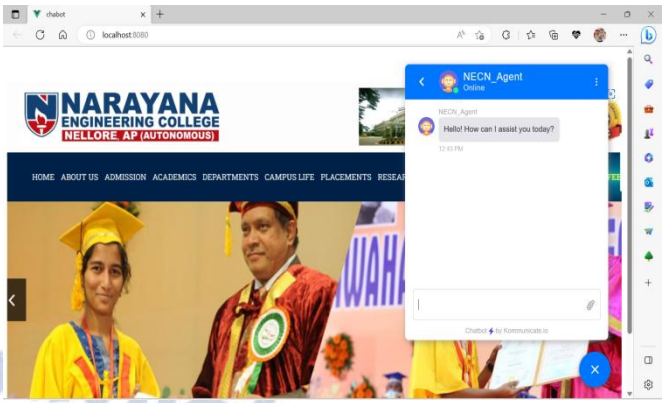
METHODOLOGY

The methodology w used in our project is NLP Algorithms. To understand the language used NLP. We used to train the model of NLP in PyTorch Platform as this platform as numerous Machine Language and Artificial Intelligence implementations easily. Google cloud Platform as the cloud database to store the intents and extents. To maintain Customer Relation Management used Kommunicate Platform.

RESULTS AND OUTPUTS

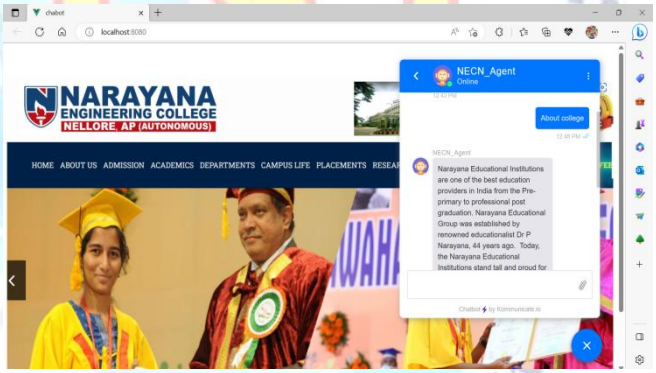


Homepage

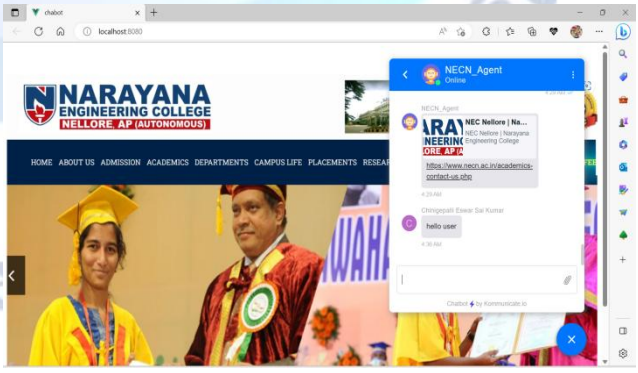


Chatbot Initial Message

Chatbot Query



Chatbot Reply



Receiving Manual Reply from the human being

FUTURE ENHANCEMENT

Personalized Answers: If the user asks his specific result of his exam, it should be able to answer by taking his unique credentials such as Roll No, Hall ticket No,

Registration No etc. So, it should answer the specific result. If he asks for a particular semester percentage it should answer the percentage details of specific semester also.

Auto Suggestion: Auto suggestion is just like when we are surfing in the internet there will be lots of suggestion as top searched questions in the down side. In our chatbot also if we type some text, it should start auto suggestion and give recommendations in the down side or right side so that it will be convenient and user friendly.

Not only in the website: Our chatbot is working only in the website right now we can integrate this to various platforms so user can access this feature from various platforms not only from the websites. For example, we can give a particular number to message in WhatsApp they get the replies in the WhatsApp. It gives flexibility to the user where he can answer the queries.

Queries Adaptation: If the queries are given from the user, it should be adapt automatically using high end Artificial Intelligence, when it's not trained for the particular query. So, because of this it may get automatically answers from AI side if the query is not trained also.

Queries getting mail to management: Queries does not train should be automatically mailed to the management. If more users are asking the same query repeatedly it should be mailed as tag with urgent modification or urgently should be answer this query users are asking repeatedly

CONCLUSION

Our Chatbots can solve a wide range of problems such as providing customer support, answering frequently asked questions (FAQ's), automating repetitive tasks, and more.

Chatbots can provide personalized assistance, immediate feedback, and 24/7 availability, allowing students to learn at their own pace and receive timely support.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

REFERENCES

[1] "A Survey of Chatbot Systems: A Brief Review" by Ankit Agarwal et al. (2019).

[2] "Chatbots: State of the Art, Challenges, and Future Research Directions" by Sumeet Kumar et al. (2017).

[3] "Chatbot Research and Design: A Bibliometric Analysis" by Ge Gao et al. (2020).

[4] 4. "Conversational Agents: Acting on the Web" by Timothy Bickmore and Justine Cassell (2005)

[5] "Designing and Implementing Conversational Agents" by Yorick Wilks (1999).

[6] "Conversational AI: Dialogue Systems, Conversational Agents, and Chatbots" by Lawrence Cavedon et al. (2020).

[7] "Building Chatbots with Python: Using Natural Language Processing and Machine Learning" by Sumit Raj (2019).

[8] A Survey of Chatbot Implementation in Different Applications" by S. Parimala Devi and K. Udaya Kumar, published in the International Journal of Innovative Technology and Exploring Engineering (IJITEE) in 2019. This paper provides a comprehensive review of chatbot implementation in various applications, including healthcare, e-commerce, education, and customer service.

[9] A Survey on Chatbot: Architecture, Natural Language Processing, and Applications" by J. Yadav and P. Singh, published in the International Journal of Engineering and Advanced Technology (IJEAT) in 2020. This paper discusses the architecture of chatbots, natural language processing techniques used in chatbots, and applications of chatbots in various fields.

[10] A Review of Chatbot Technology" by L. K. Yeo and W. T. Lee, published in the Journal of Information Technology and Economic Development (JITED) in 2020. This paper provides an overview of the different types of chatbots, their functionality, and their limitations.

[11] Chatbot Applications in Customer Service: A Literature Review" by S. S. Gupta and S. K. Bhatnagar, published in the Journal of Service Science Research in 2021. This paper focuses on the use of chatbots in customer service and reviews the literature on their effectiveness in improving customer satisfaction.

[12] "A Review of Chatbots in Education" by M. Al-Qudah, S. Al-Mashaqbeh, and R. AlNawayseh, published in the International Journal of Emerging Technologies in Learning (iJET) in 2021. This paper discusses the potential applications of chatbots in education and reviews the literature on their effectiveness in improving learning outcomes.

[13] A Survey on Conversational Agents for Customer Service" by K. D'Anna, M. Cossu, and R. Zaccagnino, published in the Journal of Ambient Intelligence and Humanized Computing in 2021. This paper provides a survey of conversational agents, including chatbots, used in customer service and reviews their benefits and limitations.

[14] A Review of Chatbots in Recruitment and Selection: Current Applications, Future Research Directions" by S. Karacay, E. Ergin, and B. Mert, published in the International Journal of Human Resource Management in 2022. This paper reviews the literature on the use of chatbots in recruitment and selection processes and discusses their potential benefits and challenges