IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 3, December 2023

College Management Chatbot System

Dr. A. A. Khatri[1], Virendra Shelavale[2], Khushi Khan[3], Sukaina Bano[4]
H.O.D, Department of Computer Science[1]
Students, Department of Computer Science,
Jaihind College of Engineering, Pune, Maharashtra, India
khatrianand@gmail.com, virushelavale1924@gmail.com, knk59326@gmail.com, sukainabano786@gmail.com

Abstract: *Chatbots are basically bots that are used to have faster and more accurate conversations with people. Nowadays, with chatbots verymuch attention in different areas. Chatbots have embedded knowledge to identify sentences and provide a response Questions.This Work proposes a chatbot to be used for school administration, the user only needs to log in to Chatbot for any college related activities. A student need not be present to know about any college related activity physically there. College Management Chatbot is developed using artificial intelligence algorithms like Porter Stemmer and word order similarity, which analyzes user queries and understands user messages to provide an accurate response this College Management Chatbot, various natural language processing techniques will be used such as parsing, stemming, Tokenization and filtering.*

Keywords: Chatbot, Virtual Assistant, NLP Techniques , Sentiment Analysis , Porter Stemmer Algorithm , Word Order SimilarityAlgorithm

I. INTRODUCTION

A chatbot is a computer program that is used for stimulation and process human conversations. Chatbot enables a human machine communication, which can be in the form of messages or voice commands.

A chatbot is basically designed to work without a human operator. Chatbot does the use of various NLP techniques and artificial intelligence Algorithms. The College Management Chatbot System Project will be developed using an artificial intelligence algorithm. The chatbot will A web application that will analyze user queries and provide an appropriate response. Users can ask their questions chatbot and bot will automatically answer the query.

The the main purpose of College Management Chatbot is saving student and faculty time. Chatbot will use artificial intelligence to answer questions. Using the Chatbot user He won't have to go to the College for Inquiry in person or anything Query.

User must register and then login to Chatbot for access it. After Registration user can ask any question related to college Chatbot. Chatbot responds to the user with an efficient graphical user Interface (GUI). User can ask any query related to college by using this web application. Chatbot College Management will provide security to all data as the user has to create their own ID And Password. By College Management Chatbot. User can be updated with every college related activity.

II. LITERATURE SURVEY

2.1 Improved Trust in Human Robot Collaboration

The LLM like ChatGPT provides an opportunity develop an interactive communicative and robust person Robotic approach This experiment showed that incorporating a humanoid robot into ChatGPT has increased trust between people. This study It uses the emerging LLM as an intelligent robotic assistant that it can communicate naturally with a human operator and is robust to a different style of speech, to explore the impact on trust.

- This thesis deals with artificial intelligence algorithms.
- Deep learning and reinforcement learning.

These methods can be used in our project to increase trust between people using artificial intelligence technology and deep learning algorithms.

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2.2 The Potential of Chatbot : Analysis of chatbot Conversations

Chat Conversations between chatbot and human are analyzed in order to identify if these interaction will be able to identify the users topic of interest and can provide user satisfaction.Users Input are Analyzed using Text Minning.

- Analytic Process
- Data Overview
- Topic Extraction

This Methods will be helpful to show various ways in which interaction data between human and chatbot can be used to enhance the companies knowledge about need of their user as well as user satisfaction.

2.3 ChatGPT Empowered Long-Step Robot Control in Various Environment

It Shows the Development of A.I ChatGPT which is used to translate the natural language instructions into robot actions which are Executable.

- It makes use of Artificial Inteligence Technique
- Use of Large Language Models.
- Designing Customizable Prompt.

It can be sued for Practical Application of Open A.I Chatbot for translating Multi Step Instructions.

2.4 Experimentation for Chatbot Usabillity Evaluation: A Secondary Study

It States The Techniques used to Evaluate Usabillity of Chatbot System.There is an Systematic Mapping Study to Identify the Research Questions , Characterstics and Metrics which are used to evaluate usability of chatbot.
Usability Evaluation is done in order to identify the Effectiveness , Efficiency and Satisfaction of users.
This Study can be done by Testing Different Combination of keywords and Analyzing the Result for Different Database used.

2.5 Retrieval Polished Response Generation for Chatbot

This Method Polishes draft response by Considering keywords present in them and then chooses the polishes response as final reply.Retrieval Polished Response Generation for Chatbto can be sued to provide the Fluency , Relevance and Diversity
This Paper Proposes an polishes response filter to choose whether final reply should be retrieval polishes or polishes response.
To Produce Retrieval Polished Response this method uses
Prototype Selector(PS)
Generation based Polisher(GP)
Polished Response Filter(PRF)

III. METHODOLOGY

3.1 Part of Speech Tagging

Part of Speech tagging is used to identify the words speech for e.g.Adverd , Adjective , Noun etc.

3.2 Wordnet Dictionary

Wordnet Dictionary plays an very important role as it is used to found meaning of any word on global database.

3.3 Porter Stemmer Algorithm

Porter Stemmer Algorithm is used to remove suffixes from words. Information Retrieval becomes easy by making use of porter stemmer algorithm.

3.4 Word Order Similarity between Sentences

T1 : A dog Jumps over Fox
T2 : A fox Jumps over Dog

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Some Words in both the sentemces are similar .So by using bag of word the machine will provide same answer but as there is some sort of difference between between sentence but this difference is only visible by human not machine. To identify the small differnces in sentences the word order similarity algorithm is used in Chatbot Systme. So the Chatbot can provide an Accrate Answer to Users Query.

3.5 NLP Techniques

- **Parsing:** The structure to a sentence can be provided by using the parsing technique. By using parsing technique, it becomes easy for chatbot to understand what is the query .
- **Stemming:** Stemming technique is used to cut the word to its root form for e.g. liked, likes, and liking are reduced to like.
- **Tokenizing :** Tokenization is used to assign an token to an sentences which would be easy for chatbot to understand the question of user

IV. CONCLUSION

We created a Chabot that any organization can use to help for users to ask their questions. Once the query is registered automatic tokens are generated and provided in the database to the customer via text message. Natural language processing technologies are used to analyze, tokenize, stem and filter the content of the Inquiry. The output is fed to algorithm where sentence strength is calculated. The intensity of the negation is calculated, which helps to prioritize a query that the service provider automatically resolves Query. In this way, the proposed system will help many organizations ensure customer satisfaction with less human effort. The College Management System saves a lot of time for both College students and faculty.

ACKNOWLEDGEMENTS

We Thank to Our Project Co-Ordinator Dr. S. D.Gunjal and Project Guide Dr. A. A. Khatri for Providing all Data regarding Project and Helping us in Developing our Project.

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