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College Enquiry Chatbot System using Artificial Intelligence

Gayathri.V[1], Saranya.V[1], Vijetha.A[1], Vijey.A[1], SriRagavi.M[1], Mrs.K. Malarvizhi[2]
[1]UG Scholar, Department of Computer Science and Engineering, Akshaya College of Engineering and Technology, Coimbatore, Tamil Nadu, India
[2]Assistant Professor, Department of Computer Science and Engineering, Akshaya College of Engineering and Technology, Coimbatore, Tamil Nadu, India

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ABSTRACT

This project aims to develop a college enquiry Chabot that answers any queries post by students like college details, course-related questions, location of the college, fee structure etc. The College Enquiry Chatbot project is built using Deep learning algorithms that analyses user's queries and understand the user's message. This System is a web application that provides answers to the query. Any individual just has to query through the bot. The answers are appropriate to what the user queries. The User can query any college-related activities through the system. The user does not have to personally go to the college for enquiry. The System analyses the question and then answers to the user. The user can also give their suggestions through the suggestion box. The system replies using an effective Graphical User Interface which implies that as if a real person is talking to the user.

Keywords: AI, Chatbot, User, Queries, Message

I. INTRODUCTION

This project aims to develop a college enquiry Chabot that answers any queries post by students like college details, course-related questions, location of the college, fee structure etc. The College Enquiry Chatbot project is built using machine learning algorithms that analyse user's queries and understand the user's message. This System is a web application that provides answers to the query. Any individual just has to query through the bot. The answers are appropriate to what the user queries. The User can query any college-related activities through the system.

The user does not have to personally go to the college for enquiry. The System analyses the question and then answers to the user. The user can also give their suggestions through the suggestion box. The system replies using an effective Graphical User Interface which implies that as if a real person is talking to the user.This project is focusing on creating a chatbot to be used by students to get their queries responded easily from the college website. A chatbot is a program which can do real conversations with textual

and/or auditory methods [1]. Using Artificial Intelligence (AI), chatbots can simulate human conversations. There are two categories of chatbots. One category is command based chatbots where chatbots rely on a databank of replies and heuristics.

The user must be very specific while asking the questions so that the bot can answer. Hence, these bots can answer limited set of questions and cannot perform function outside of the code. The other category is chatbots based on AI or machine learning algorithms, these bots can answer ambiguous questions which means the user do not have to be specific while asking questions. Thus, these bots create replies for the user's queries using Natural Language Processing (NLP).

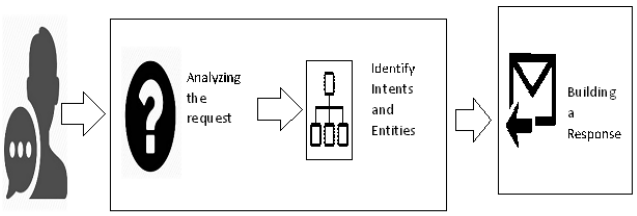

Figure 1. Processing System

II. LITERATURE REVIEW

College Enquiry Chatbot using Rasa Framework

The growth of technologies like Artificial Intelligence (AI), Big Data & Internet of Things (IoT), etc. has marked many advancements in the technological world since the last decade. These technologies have a wide range of applications. One such application is "Chatterbot or "Chatbot". Chatbots are conversational AIs, which mimics the human while conversing & eliminates the need of human by automating mundane tasks. In the study undertaken, we have created a chatbot in education domain & it is named as "College Enquiry Chatbot", This chatbot is a web-based application that analyses and understands user's queries and provides an instant and accurate response. Rasa technology is used to construct this chatbot. It's an open-source technology, which uses its two main packages i.e., Rasa Core & Rasa Natural Language Understanding (NLU) in order to build a Contextual AI Chatbot. NLU is used to infer the intent and to extract the necessary entities from user input & the Rasa Core provides the output by building a probabilistic model with the help of Recurrent Neural Network (RNN).

Chatbot System for Collage FAQ's Using Artificial Intelligence

A chat larva (also called a talk Bot, chatterbox, Artificial informal Entity) may be a worm that conducts a oral communication via sensory system or matter ways. Such programs are usually designed to convincingly simulate however an individual's would have as a conversational partner, there by passing the Turing test. Chat bots are typically employed in dialog systems for numerous sensible functions as well as client service or information acquisition. Chatbot are often integrated into the dialog systems of ,for example, automated online assistants, giving them the ability of, for example, small talking or engaging in casual conversation sun related to the scopes of their primary expert systems.

College Enquiry Chat Bot project will be built using artificial intelligence algorithms. That will analyze users queries and understand users message. This system will be a web application which can give answers to the queries of the scholars. Students can simply ought to choose the class for the department queries then raise the question to the larva which will be used for chatting. computer science are accustomed answer the scholars queries. The student will get the appropriate answers to their queries. The answers will be provide mistreatment the inbuilt computer science algorithms. Students won have to travel to the college to make the enquiry.

The system replies using ineffective Graphical user interface which suggests that as if a true person is reprehension the user. The user simply must register himself to the system and must login to the system. once login user will access to the various she ping pages Various helping pages has the both rough which the user can chat by asking queries related to college activities. The system replies to the user with

the help of effective graphical user interface. The user can query about the college related activities. Through on-line with the assistance of this internet application. The user will question school connected activities such as date and timing of annual day, sports day, and other cultural activities. This system helps the student to be updated about the college activities.

III. PROPOSED SYSTEM

The Proposed System was deep learning with tensor flow using deep neural network. A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. However, from a technological point of view, a chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP). Our Proposed Method is Feed Forward Neural Network (FFN) and Natural Language Processing (NLP) the feed forward neural network was the first and best type of artificial neural network devised in this network.

Advantages

- Simple User Interface Design and User Experience.
- Personalized Conversation.
- Ability to Learn.
- Acknowledge When Questions are Beyond Their Scope.
- Customer Experience Comes First.

Deep learning is actually a subset of machine learning. It technically is machine learning and functions in the same way but it has different capabilities.

The main difference between deep and machine learning is, machine learning models become well progressively but the model still needs some guidance. If a machine learning model returns an inaccurate prediction then the programmer needs to fix that problem explicitly but in the case of deep learning, the model does it by him. Automatic car driving system is a good example of deep learning.

Deep Learning, as a branch of Machine Learning, employs algorithms to process data and imitate the thinking process, or to develop abstractions. Deep Learning (DL) uses layers of algorithms to process data, understand human speech, and visually recognize objects. Information is passed through each layer, with the output of the previous layer providing input for the next layer. The first layer in a network is called the input layer, while the last is called an output layer. All the layers between the two are referred to as hidden layers. Each layer is typically a simple, uniform algorithm containing one kind of activation function.

Feature extraction is another aspect of Deep Learning. Feature extraction uses an algorithm to automatically construct meaningful “features” of the data for purposes of training, learning, and understanding. Normally the Data Scientist, or programmer, is responsible for feature extraction.

Speech recognition, also called speech-to-text, is the task of reliably converting voice data into text data. Speech recognition is required for any application that follows voice commands or answers spoken questions. What makes speech recognition especially challenging is the way people talk—quickly, slurring words together, with varying emphasis and intonation, in different accents, and often using incorrect grammar.

Part of speech tagging, also called grammatical tagging, is the process of determining the part of speech of a particular word or piece of text based on its use and context. Part of speech identifies ‘make’ as a verb in ‘I can make a paper plane,’ and as a noun in ‘What make of car do you own?’

Word sense disambiguation is the selection of the meaning of a word with multiple meanings through a process of semantic analysis that determine the word that makes the most sense in the given context. For example, word sense disambiguation helps distinguish the meaning of the verb 'make' in ‘make the grade’ (achieve) vs. ‘make a bet’ (place).

Named entity recognition, or NEM, identifies words or phrases as useful entities. NEM identifies 'Kentucky' as a location or 'Fred' as a man's name.

Co-reference resolution is the task of identifying if and when two words refer to the same entity. The most common example is determining the person or object to which a certain pronoun refers (e.g., 'she' = 'Mary'), but it can also involve identifying a metaphor or an idiom in the text (e.g., an instance in which 'bear' isn't an animal but a large hairy person).

IV. DATA PREPROCESSING

Pre-processing refers to the transformations applied to our data before providing the data to the algorithm. Data Preprocessing technique is used to convert the raw data into an understandable data set. In other words, whenever the information is gathered from various sources it is collected in raw format that isn't possible for the analysis.

Train and Test Data

- For choosing a model we split our dataset into train and test
- Here data's are split into 3:1 ratio that means
- Training data having 70 percent and testing data having 30 percent
- In this split process preforming based on train_test_split model
- After splitting we get xtrainxtest and ytrainytest

Model Creation

- Contextualise machine learning in your organisation.
- Explore the data and choose the type of algorithm.
- Prepare and clean the dataset.
- Split the prepared dataset and perform cross validation.
- Perform machine learning optimisation.
- Deploy the model.

Model Prediction

College enquiry chat-bot is a simple web based application which aims to provide information regarding college. The chat-bot uses Natural Language Processing and Artificial Neural Network to have conversation with humans. The responses of this chat-bot are programmed up to some extent which trains the model for giving responses.

V. CONCLUSION

The goal of the system is to help the students to stay updated with their college activities. Artificial Intelligent is the fastest growing technology everywhere in the world, with the help of Artificial Intelligent and Knowledgeable database. We can make the transformation in the pattern matching and virtual assistance. This system is developing chat bot based on android system so with the combination of Artificial Intelligent Knowledgeable database and virtual assistance. We can develop such chat bot which will make a conversion between human and machine and will satisfy the question raised by user. The main motive of the project is to reduce the work load on the college's office staff and reduce the response time to a user's query.

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