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College Enquiry Chat Bot Using Machine Learning

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Abstract: ***To develop a college enquiry Chatbot 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, Neural Network with Natural Language Processing that analyze 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.

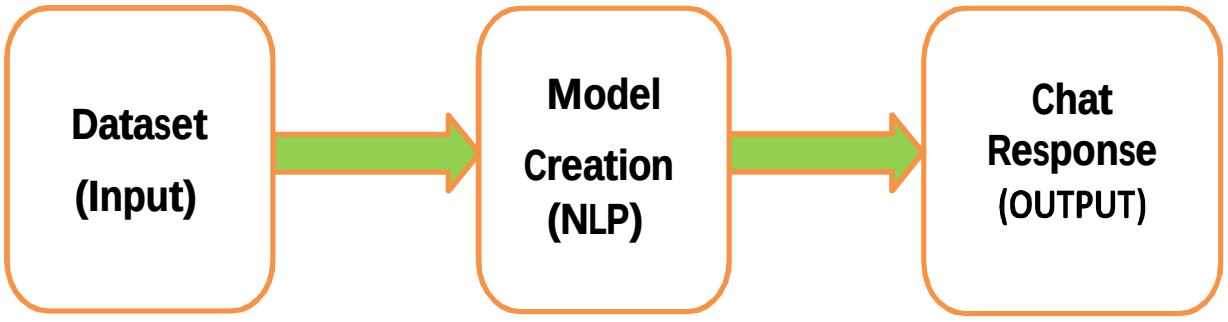
I. INTRODUCTION

Chatbot is an intelligent software program that interacts with humans. A Chabot works similar to human-like conversations on chat. Its primary task is to help users by providing answers to their questions by understanding what humanwants and guides them to their desired outcome. Nowadays, various Chabot's are responsible to solve a number of business-related tasks in order to improve customer experiences across many industries like Insurance, E-Commerce, Banking, Healthcare, and many others. A Deep Learning chatbot uses Natural Language Processing in order to map user inputs to some intents. It will classify the messages to send a prepared response.

Thus, using deep learning and natural language processing, the chatbot becomes an intelligent software piece that enables it to process, comprehend and as well response using the natural language understanding. Usually, we use special RNNs called LSTMs to build a chatbot.

When using NLP to develop a chatbot, the main thing one should achieve is to create a chatbot that requires very little or say no human interaction at all. However, it is tough to improve answers and selecting best model to guarantee the most relevant response in the field of Chabot. The Aim of taking up this project is to provide a chat-bot system that deals with academic activities like inquiring about admissions, fees structure, getting details of departments, etc. And using this chat-bot system, the fresher's, students and faculty can directly clear their queries in lesser time.

Architecture



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II. MODULE DESCRIPTION

A. *Data Collection*

It is a dataset with different tags, and each tag has patterns and responses.These patterns and responses take Question and Answer form. The dataset has a dictionary mapping of dictionaries. First, intents are mapped with tags, patterns, context, and responses, and then each of them is mapped with their queries and keywords. This is a small dataset, and training it over deep neural networks model leads to over fitting the model, to find the optimal learning rate appropriate precautions must be taken while building the model.

B. *Data Pre-Processing*

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 thatisn't possible for the analysis.

C. *Training Data And Test Data*

1) Here data's are split into 3:1 ratio
2) For choosing a model we split our data set into train and test
3) Training data having 70 percent and testing data having 30 percent
4) In this split process preforming based on train_test_split model
5) After splitting we get xtrain xtest and ytrain ytest

D. *Model Creation*

1) Contextualize machine learning in your organization.
2) Explore the data and choose the type of algorithm.
3) Prepare and clean the dataset.
4) Split the prepared dataset and perform cross validation.
5) Perform machine learning optimization.
6) Deploy the model.

E. *Model Prediction*

The training data is produced in which the input and the output data is provided. The input will be the pattern, and output will be the class the input pattern. The input is first divided into small parts called tokens then they are all lemmatized so that strings can be compared from the chatbot database, this database contains all the responses, and an appropriate message is given as a response to the user.

III. 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. 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.

IV. FUTURE WORK

1) *Enhanced Course Assistance:* The chatbot can provide personalized recommendations for courses based on students' interests, academic performance, and career goals. It can assist in course registration, provide information on prerequisites, and offer guidance on building a suitable class schedule.
2) *Academic Support:* The chatbot can offer academic support by providing explanations, examples, and additional resources related to various subjects. It can assist with homework questions, suggest study strategies, and offer tips for effective time management and exam preparation.
3) *Campus Information and Navigation:* The chatbot can serve as a virtual campus guide, providing information on buildings, facilities, services, and events. It can help students navigate the campus, locate classrooms or offices, and provide real-time updates on transportation and parking availability.

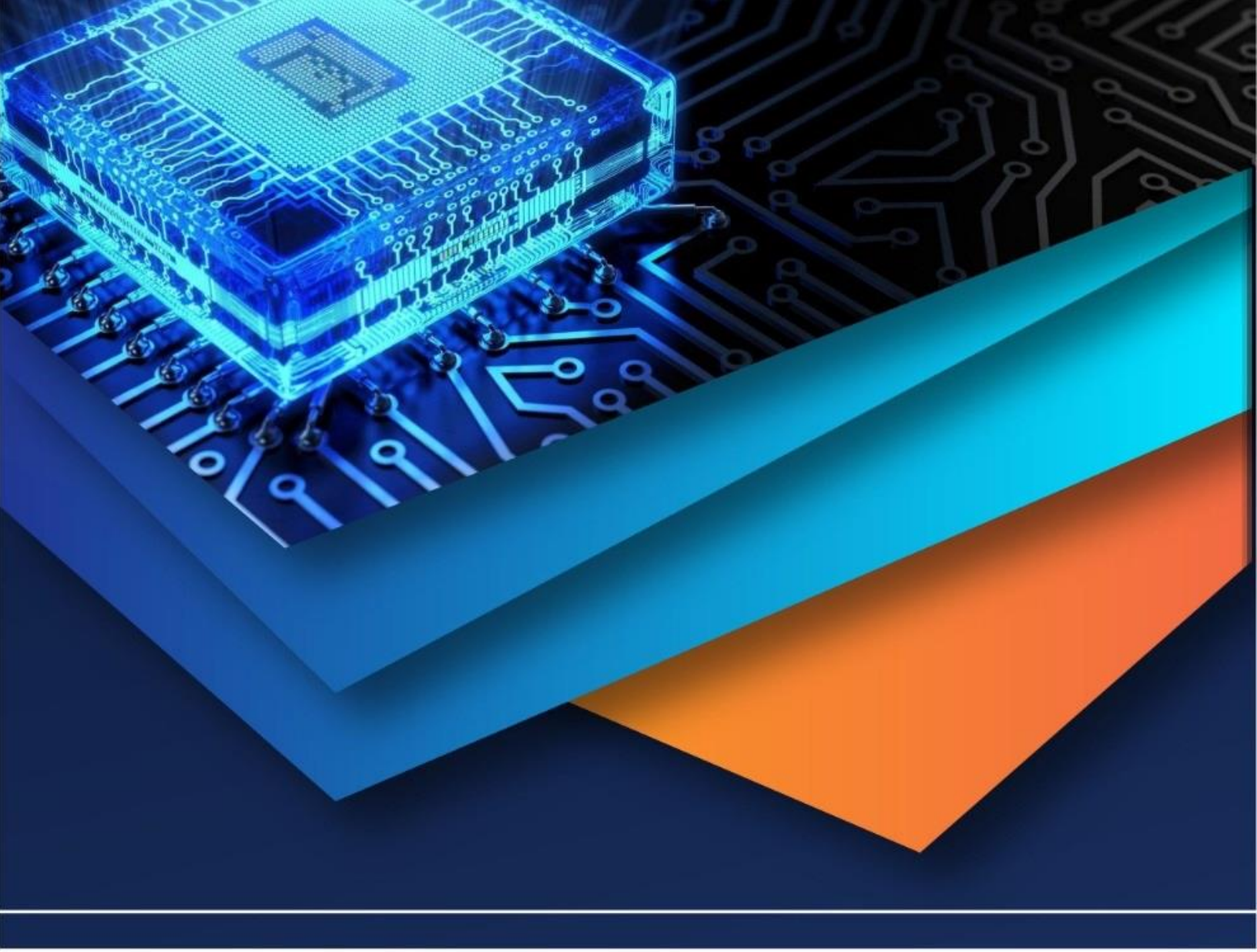
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4) *Student Services:* The chatbot can assist with administrative tasks such as admissions, financial aid, and registration. It can provide information on deadlines, required documents, and application procedures. Additionally, the chatbot can help students access resources like counseling services, career guidance, and extracurricular activities.
5) *FAQs and Troubleshooting:* The chatbot can address common student inquiries by maintaining a comprehensive database of frequently asked questions. It can provide quick responses to queries about academic policies, campus life, IT support, library services, and more. Furthermore, the chatbot can offer troubleshooting assistance for common technical issues students might encounter.

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