

# A Result on Admission Enquiry Chatbot

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## Abstract

The college admission inquiry chatbot is an AI-driven system designed to assist prospective students and their families by providing real-time information on the college admission process. By integrating machine learning, specifically Natural Language Processing (NLP) and speech recognition technologies, the chatbot can handle both text and voice inputs, making it accessible to a wider audience. Users can ask questions related to various aspects of college admissions, such as application deadlines, eligibility criteria, required documents, scholarship opportunities, entrance exams, and available programs.

When a user submits a query- whether typed or spoken – the system processes the input using advanced NLP algorithms to extract the key information and understand the context of the question. The chatbot then cross-references the query with a pre-built knowledge base of admission-related information. It formulates an accurate response, which can be delivered in either text or synthesized speech, depending on the user's preference. This interactive system not only reduce the workload on college administration by automating frequently asked question but also ensures that users receive instant and reliable responses at any time of day.

**Keywords:** Chatbot, Natural Language Processing (NLP), Speech Recognition, College Admission, Real-time Information, Knowledge Base

## 1. INTRODUCTION

The college admission inquiry chatbot is an innovative AI-driven solution designed to streamline the process of providing information to prospective students and their families regarding college admissions. In today's fast-paced educational environment, students often seek immediate answers to their questions about application procedures, deadlines, and requirements. This chatbot addresses that need by offering an accessible platform that can respond to inquiries at any time, ensuring users receive timely and accurate information. By integrating advanced technologies such as Natural Language Processing (NLP) and speech recognition, the chatbot can effectively handle both text and voice inputs. This flexibility allows it to cater to a diverse audience, making the admission process more userfriendly. When users submit queries, the system employs sophisticated NLP algorithms to analyze the input, extracting key information and understanding the context of the questions posed. This capability enables the chatbot to deliver relevant and precise responses, greatly enhancing the user experience. The system is built upon a comprehensive knowledge base that encompasses a wide range of admission-related topics, including eligibility criteria, required documents, scholarship opportunities, and available programs. By cross-referencing user inquiries with this knowledge base, the chatbot can provide accurate information, reducing the burden on college administration. This automation of frequently asked questions not only increases efficiency but also allows staff to focus on more complex inquiries, ultimately improving overall operational effectiveness. In

summary, the college admission inquiry chatbot is a pivotal tool that enhances communication, accessibility, and information dissemination in the college admission landscape.

## 2. LITERATURE SURVEY

Ashok Kumar and Ajay Palakurthi[1] designed chatbot to assist college website visitors by providing answers to questions on admissions, academics, and other campus activities. Using Machine Learning (ML) and Natural Language Processing (NLP), the chatbot interprets natural language queries and retrieves relevant information from a knowledge base, with WordNet aiding in matching user inputs to appropriate responses. A user-friendly GUI allows students to select categories and enter questions, while an admin interface supports updating responses based on feedback to continuously refine accuracy. By automating answers to frequent inquiries, this system enhances information accessibility and offers a scalable, efficient solution for college administration.

Rohan Parker et al. [2] presents "ApsitBot," an AI-based web chatbot designed for college inquiries, streamlining access to information for students, parents, and faculty. Using Natural Language Processing (NLP) and Machine Learning (ML), the chatbot processes user queries and responds conversationally to questions about courses, activities, and general college information. The system, developed with HTML, CSS, and Flask-SocketIO, employs a feedforward neural network to classify and answer questions. With features like tokenization, stemming, and a bag-of-words model, ApsitBot accurately interprets user intent and includes a FAQ system to provide quick responses. This tool aims to enhance information accessibility, reduce administrative workload, and support users in easily staying informed.

3. "Generating and Analyzing Chatbot Responses using Natural Language Processing", MoneerhAleedy, HadilShaiba.

This paper discusses a study focused on developing an interactive chatbot for customer support, leveraging deep learning and natural language processing (NLP). The authors explore various machine learning models, including Long Short-Term Memory (LSTM), Gated Recurrent Units (GRU), and Convolutional Neural Networks (CNN), to automate responses to customer queries on platforms like Twitter. This chatbot aims to provide real-time, relevant customer support by generating responses that simulate human interaction. The paper details the data preparation, model design, and training process, emphasizing sequence-to-sequence learning and word embedding techniques. To evaluate the models, metrics such as BLEU scores and cosine similarity were applied, revealing that LSTM performed best across evaluation metrics, especially for emotionally nuanced queries. The authors conclude that these AI-driven chatbots can enhance customer service by reducing delays, increasing satisfaction, and providing constant availability. Future work is directed at expanding the chatbot's vocabulary and refining similarity measures to improve response accuracy and relevance further.

4. "College Enquiry Chatbot Project", Dipti Mangnale, Mayur Pawar, KedarBasanwar, Parimal Yadav, Mrs. Mansi Bhosale.

This paper discusses the development of a chatbot system using artificial intelligence (AI) and natural language processing (NLP) to streamline college-related queries. Aimed at improving user experience on college websites, the chatbot leverages AI to answer questions about admissions, attendance, grades, placements, and other academic details. The system's architecture integrates modules that analyze user input, authenticate user details for personal queries, and employ AIML (Artificial Intelligence Markup

Language) for general conversation patterns. It uses techniques like semantic similarity and WordNet for accurate response generation. By saving unanswered queries in a log file, the system can expand its knowledge base over time, allowing administrators to improve response accuracy based on real interactions

### 3. METHODOLOGY

The methodology for developing the college admission inquiry chatbot involves several key steps aimed at creating an effective and responsive system. Firstly, requirement analysis is conducted to identify the common inquiries prospective students and their families have regarding admissions. This includes questions about application procedures, deadlines, eligibility criteria, and scholarship opportunities. Following this, a knowledge base is constructed, compiling all necessary admission-related information from official college sources, which serves as the foundation for the chatbot's responses.

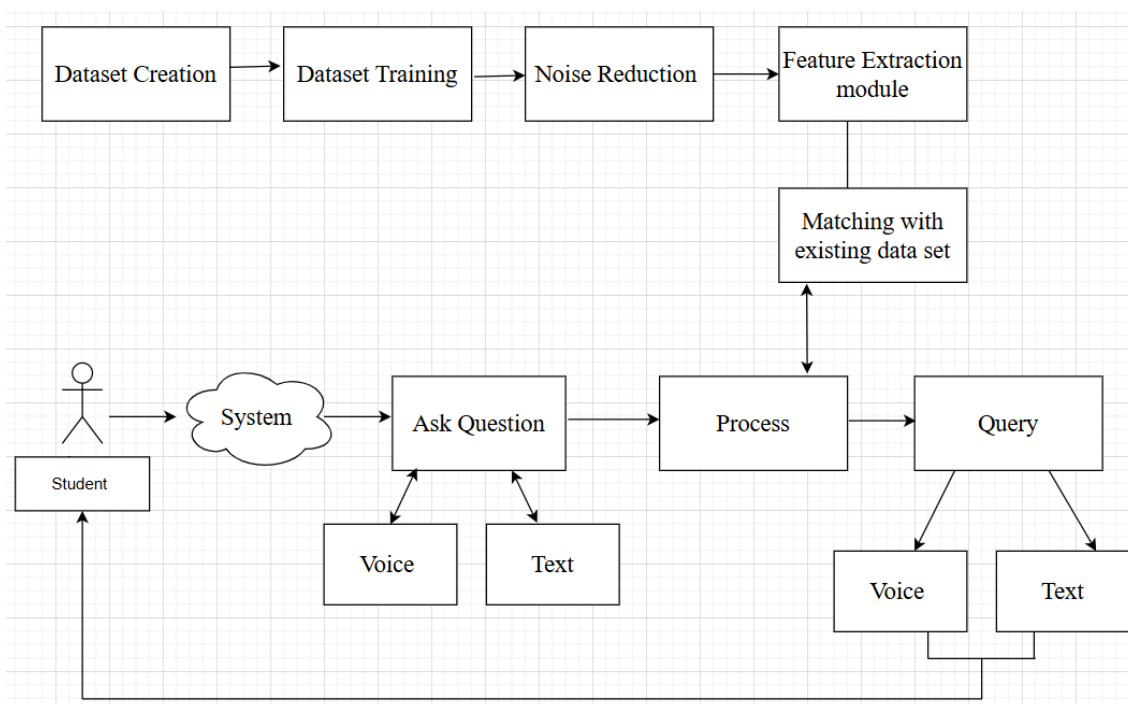
The next step involves integrating Natural Language Processing (NLP) and speech recognition technologies, enabling the chatbot to understand and process both text and voice inputs effectively. NLP algorithms are trained using datasets containing various user queries to accurately interpret the context and extract key information. For the chatbot interface, a user-friendly design is implemented, ensuring easy interaction for users seeking quick and clear responses.

The system architecture includes a backend that handles the query analysis by cross-referencing user inputs with the knowledge base to provide accurate and contextually relevant answers. Additionally, machine learning techniques are applied to continuously improve the chatbot's performance by learning from user interactions, enhancing its accuracy over time. Lastly, comprehensive testing and validation are conducted to ensure the chatbot provides reliable and consistent responses, thereby optimizing the user experience and reducing the workload on college administration staff.

### 4. OBJECTIVE

1. To develop a machine learning-based chatbot that accurately responds to college admissions-related queries in real-time.
2. To implement NLP and speech recognition technologies for processing both text and voice inputs from users.
3. To create an intuitive user interface that supports seamless communication and enhances user experience.
4. To continuously improve the chatbot's performance and accuracy through machine learning feedback mechanisms.

## 5. SYSTEM ARCHITECTURE



**Figure 1: Architecture diagram of admission enquiry chatbot**

## 6. ADVANTAGES & DISADVANTAGES

### 6.1 Advantages

1. The chatbot provides real-time, 24/7 responses to users' inquiries, ensuring quick access to important admission information at any time of day.
2. With both text and voice input options, the chatbot caters to a broader range of users, including those with disabilities or language barriers.
3. By automating frequently asked questions, the chatbot minimizes the need for administrative staff to answer repetitive inquiries, allowing them to focus on more complex tasks.
4. The system uses a knowledge base and NLP algorithms to deliver precise and context-aware answers, reducing the chances of human error in answering admission-related queries.
5. Prospective students and their families receive personalized, easy-to-understand responses, enhancing their overall experience during the college admission process.

### 6.2 Disadvantages

1. The chatbot's responses rely on the knowledge base, so it may not be able to provide answers to questions that are not included in the database or contain outdated information.
2. If the chatbot misinterprets user queries or provides incorrect answers, users may become frustrated, especially if the system lacks a robust error-handling mechanism.

## 7. RESULTS

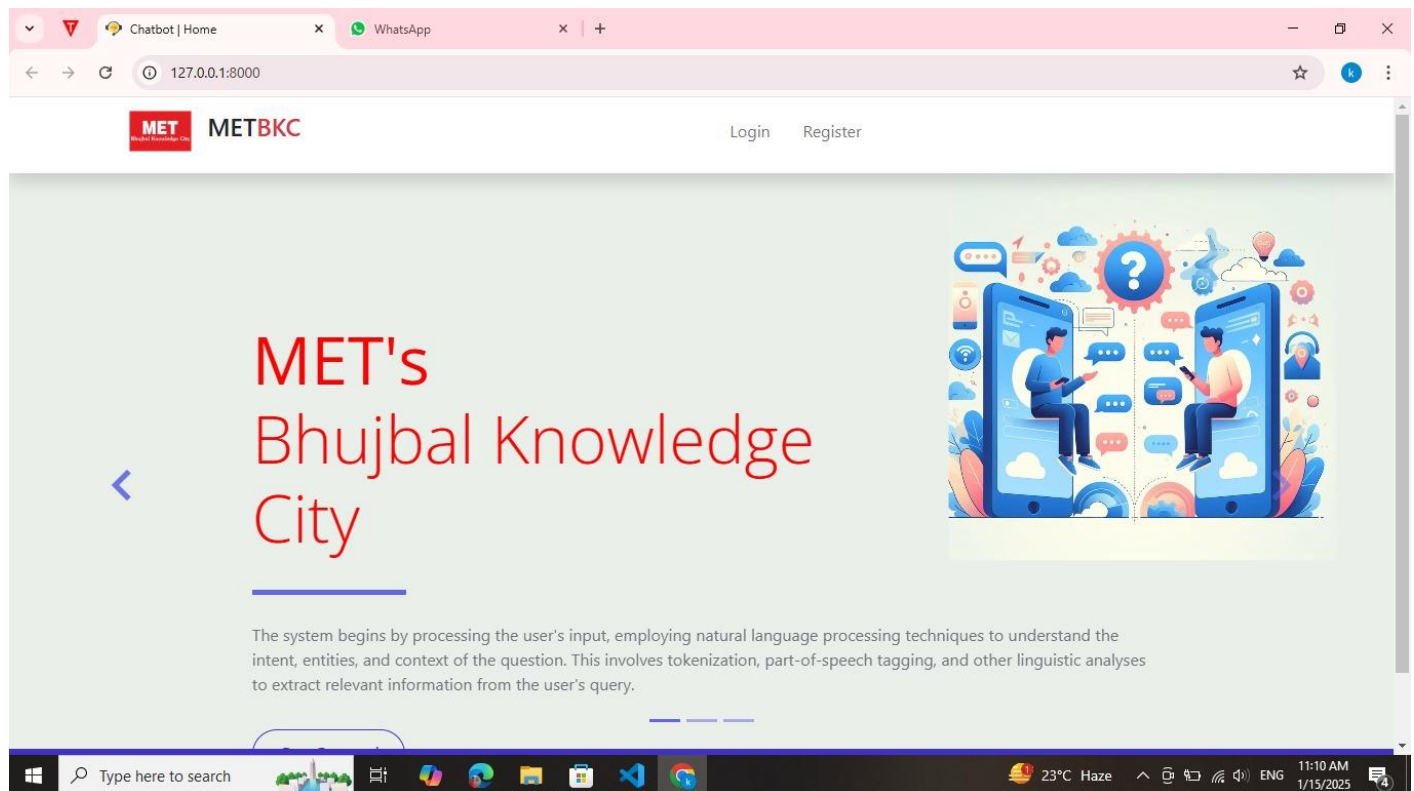


Figure 2

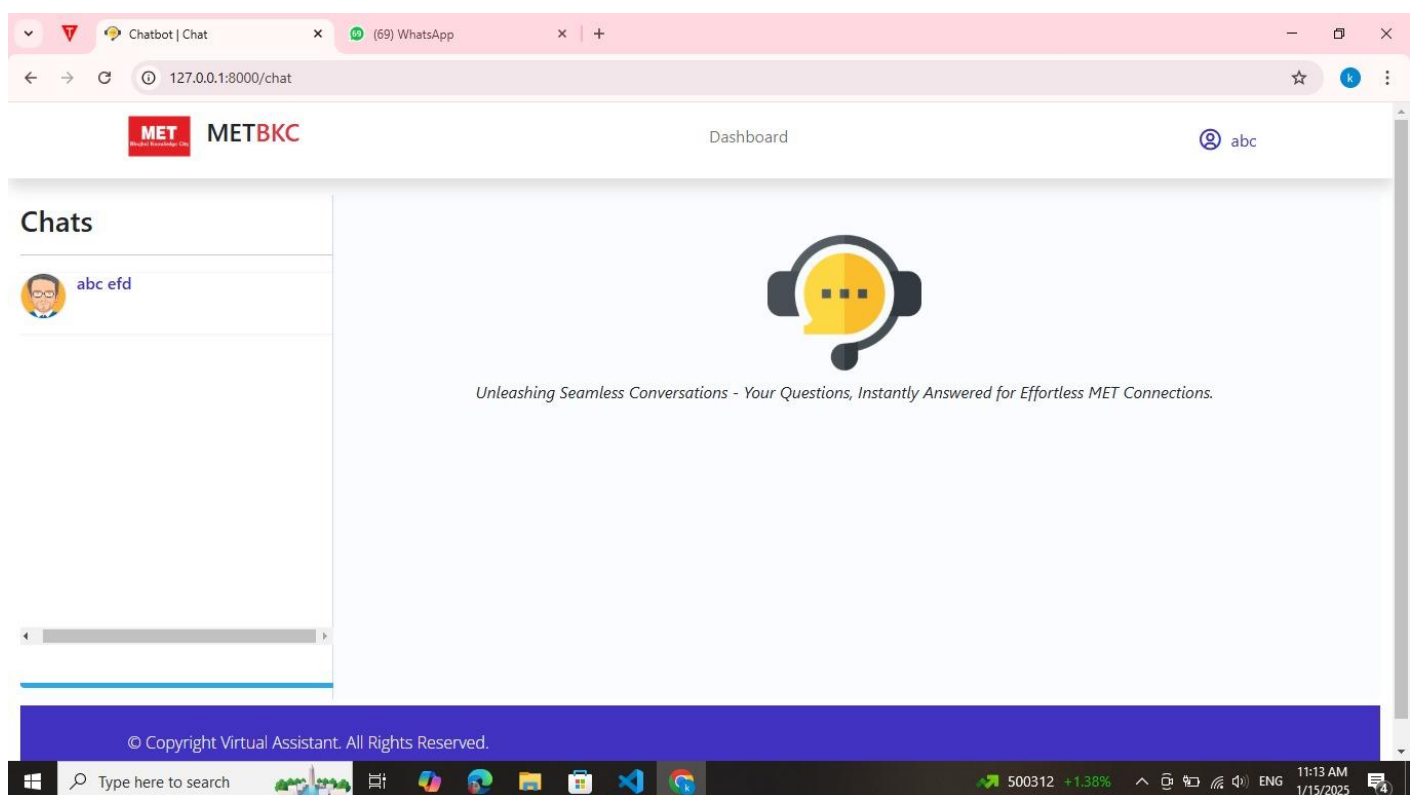


Figure 3

## 8. CONCLUSION

The implementation of a machine learning-powered college admission inquiry chatbot will significantly enhance the user experience by providing instant, accurate responses to prospective students and their families. By automating the admissions process, the system will improve operational efficiency for college administrations and ensure continuous adaptation to user needs through ongoing learning.

## 9. REFERENCES

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