

AI-Driven Admission Assistance Chatbot for Streamlined University Enrollment

Project
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Project Synopsis

Presented by
Divya Choudhari
23112007

Under the guidance of
Prof. Nitin Patil

Department of Computer Science
Savitribai Phule Pune University, Pune

Abstract

This project focuses on designing and implementing an AI-driven chatbot tailored to assist prospective students in navigating the university admission process. Unlike traditional methods, which often require manual intervention and involve repetitive queries, this chatbot leverages advanced natural language processing (NLP) techniques and machine learning algorithms to automate responses, ensuring accuracy, scalability, and user satisfaction. Additionally, the project incorporates web scraping techniques using BeautifulSoup to extract structured data from university web pages, converting them into accessible formats for chatbot training and analysis. This approach enhances user engagement, reduces administrative overhead, and provides an intuitive interface for prospective students.

Objective

To develop an AI-driven chatbot for university admissions:

1. Automate FAQs: Answer common admission-related queries, such as eligibility, deadlines, and course details.
2. Application Tracking: Allow students to check the status of their applications dynamically.
3. Personalization: Provide tailored responses based on individual user profiles and preferences.
4. Data Extraction: Use BeautifulSoup to extract structured data (paragraphs, tables, and lists) from university web pages for training and data integration.
5. Continuous Learning: Enable the chatbot to improve by learning from user interactions and new datasets.

Methodology :

1. Requirement Analysis: Researching admission processes and identifying key features required in the chatbot.
2. Data Extraction Using Beautiful Soup:
 - Parsing HTML documents to extract paragraphs, tables, and ordered lists.
 - Storing extracted data into structured text files for further processing.
 - Using this data to create a robust knowledge base for chatbot training.
3. Chatbot Development: Building the chatbot using Python, machine learning (PyTorch), and NLP tools. Incremental feature development will begin with basic query handling, advancing to more complex capabilities like dynamic learning and response generation.
4. Integration: Integrating the chatbot with external systems like application databases or university information portals for seamless communication.
5. Testing: Comprehensive unit and integration testing to validate functionality, user experience, and accuracy of responses.
6. Documentation: Preparing detailed technical and user manuals for deployment and maintenance.

Expected Outcomes

1. A fully functional AI chatbot capable of automating admission assistance and reducing manual intervention.
2. Structured text files containing web content extracted using Beautiful Soup, enabling efficient data analysis and integration.
3. Enhanced user experience through quick and precise responses to admission queries.
4. Improved understanding of chatbot implementation and NLP-based query handling in the context of higher education.

Conclusion

This project offers a unique opportunity to explore the intersection of artificial intelligence, web scraping, and higher education. By developing an AI-driven chatbot and utilizing BeautifulSoup for data extraction, the initiative not only streamlines the admission process but also sets the stage for scalable solutions in academic assistance. The resulting system will serve as a valuable tool for both prospective students and university administrators, showcasing the potential of AI in addressing real-world challenges.