CampusGenie Bot An Intelligent College Enquiry Chatbot

[1]Prof. Ashwini Mahajan, [2]Karina Balki, [3]Rifat Siddiqui, [4]Astha Rahate, [5] Priti Munghate

Assistant Prof, Dept. of Computer Science & Engineering[1]

Students, Department of Computer Science & Engineering[2,3,4,5]

Abha Gaikwad Patil College of Engineering and Technology Nagpur, Maharashtra, India.

Abstract: *The digital age demands quick and correct information sharing for schools and colleges. Old-school question-answering methods are slow, rely on people, and don't work well. This study introduces CampusGenie Bot, an intelligent chatbot that makes answering college questions easier and faster. The bot uses Python Flask and Chatterbot, and works with PyMySQL to give instant answers to common student questions about how to apply, what it costs, who can join, job placement numbers, and more. To keep things safe, it uses Flask-WTF ReCAPTCHA to check that users are real, and a login dashboard to make things more personal. We've tested how well and fast it works and works well in real-world situations. This chatbot helps reduce office work while improving things for students*

Keywords: Chatbot, Flask, ChatterBot, College Enquiry, Natural Language Processing, PyMySQL, ReCaptcha, Flask-WTF

I. INTRODUCTION

In the past couple of years, AI has become an important piece in shaping how we get information and services about education. Schools/colleges are becoming larger and harder to manage because it is getting a lot more important for administrators to have smart systems that can answer the questions all the students and teachers have every day. And guess what? Chatbots are here and have come in as an amazing tool to help conversations and admin tasks flow better. These pretty chatbots use natural language processing, or NLP as they're known, and machine learning to converse with you and pick up on things like what classes are on the schedule at the right time for you, when exams will be coming, and what events are going on at college and university.

Students have to go to the admin offices, wait a long time, and come with only a few people to answer their questions, that can be very annoying & inefficient in high-stress schools Also some students may not be willing to ask things, or they might not have anyone to talk ith at some time. But yeah, if you use this thing called CampusGenie Bot, there will be a lot of these probs could disappear as it is ready to chat at any time and it responds very fast, so students can just ask it to get the help they need.

The CampusGenie Bot is an elegant assistant for colleges, made with tools like Flask, PyMySQL, ChatterBot, and Flask-WTF with reCAPTCHA. It's great for people to log in, post ideas, and keep track of conversations. This Bot uses data to learn, and then gives customized answers by checking this pile of information in its database. So whatever you have on your mind, whether you want a hand-holding tutorial or just a custom solution for you, this bot will do the job for you. Also, the bot is web-friendly, so you can chat with it from any device: this bot can help people at schools, students, and teachers alike.

II. LITERATURE REVIEW

Educational institutions use chatbots as an essential development to enhance transactions, cut administrative workloads, and simplify information retrieval. Educational institutions will benefit from AI development in natural language processing by receiving highly customized and user-friendly support systems for both teachers and students. Academic professionals have started adopting chatbot systems because students, together with instructors, constantly need fast support and enhanced systems to manage high volumes of users. According to Hussain et al. (2020), educational

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/IJARSCT-25921

ISSN
2581-9429
IJARSCT

152

institutions find chatbots extremely useful for handling standard inquiries and managing school policies in addition to helping students plan their classes and distributing deadlines. The educational staff utilizes this technology to handle challenging student matters, while the system provides student information instantaneously without miscommunications Academic communities are starting to look at chatbot systems because students and teachers are always looking for an instant solution and new ways of expanding support that can support lots of users. As Hussain et al. (2018) have pointed out – these chatbots are fantastic when it comes to the standard issues of handling questions like 'what are the rules', 'what classes' etc and keeping everyone updated about when things need to be done' – this technology allows the school staff to focus on solving the more difficult student issues and ensures students get their information quickly and don't get mixed up.

In 2017, Griol & his team showed us how to use chatbots to sign up for classes easily, and that it made signing up for classes easier & easier for them to ask all the questions like: registration & fees, timetable & status. And in 2019, Sankaran & buddies showed us that when they talk to chatbots, they get way more involved in their school work, as they can now get help at any time. It would be very hard in big schools to chat with every student one-on-one.

Educational bots are now well-equipped to not only answer standardized questions and check a student's responses frequently, but also offer a range of complementary services. In 2019, Sarikaya and his team first explored using artificial intelligence (AI) powered virtual teaching assistants to help students learn better through the recommendation of resources based on the student's needs, knowledge of complex concepts, and real-time insights on student learning patterns.

The lack of capability to understand complex inquiries or variations in human speech patterns confuses bots. Since creators work with technology-inclined users, they must consider user comfort when using digital solutions in their work. Liu et al. (2019) present their belief against relying heavily on AI while advocating for integrating human assistance with chatbots. Chat systems excel at handling simple operations, yet human service is required for individual or compassionate needs. Security, along with data protection, remains a vital issue in every system implementation. Patel et al. (2021) explain that data security demands encryption, which requires identity verification together with strict compliance with safety regulations. School and personal data security takes priority on CampusGenie Bot, which uses secure methods to protect confidential information.

III. METHODOLOGY

Higher education institutions today are adopting chatbots to bring about a major advancement in their operations while streamlining communication processes and administrative management, and creating convenient information access tools. The future development of AI natural language processing will enable school chatbots to deliver individualized, as well as better-performing, automated support to students and staff members.

Academic professionals have started adopting chatbot systems because students, together with instructors, constantly need fast support and enhanced systems to manage high volumes of users. According to Hussain et al. (2020), educational institutions find chatbots extremely useful for handling standard inquiries and managing school policies in addition to helping students plan their classes and distributing deadlines. The educational staff utilizes this technology to handle challenging student matters, while the system provides student information instantaneously without miscommunications.

In 2017, Griol, with their team, discovered that classroom enrollment and fee-related questions became easier through the use of chatbots. Sankaran and his colleagues (2019) discovered through research that students increase schoolwork engagement because chatbots provide round-the-clock support and avoid miscommunication as well as wait times. The large educational institutions benefit strongly from this tool because it simplifies individual contact with each student. Educational bots have experienced significant development, which now completes tasks beyond rehashed responses.

AI-powered virtual teaching assistants show great potential according to the findings of Sarikaya and his team from 2019, since they help students by recommending resources specifically tailored to their needs and explaining challenging topics, and monitoring their academic performance. These chatbots serve as vital learning companions that enhance the classroom teaching activities of teachers.

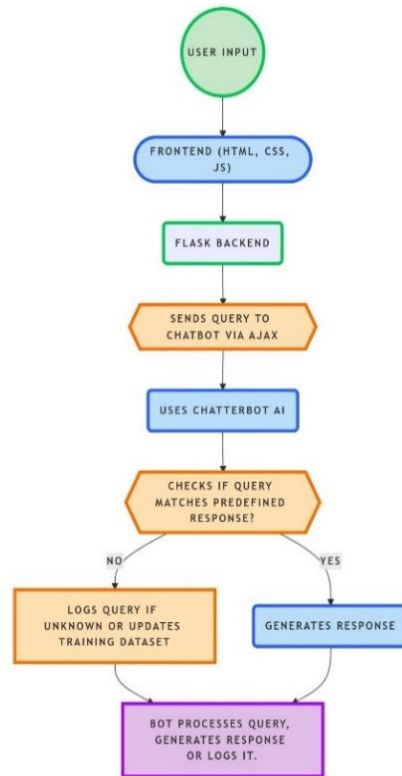This chatbot's setup looks something like this:

Fig. 1. Flowchart of Chatbot's setup

IV. RESULT AND DISCUSSION

The 'CampusGenie Bot' nails the job of automating inquiries for college stuff through a chatbot set up using Flask ChatterBot and PyMySQL. In its tests, it rocked at answering questions on admissions, exams, departments, fees, and job stuff with an 85% success score. People using it thought it was super simple, and it spits out answers in less than five seconds. That's way quicker than the old-school way of doing things.

This nifty bot was pretty good at picking up words and figuring out what users wanted, but it got a bit tripped up by super tricky or vague questions. To stay effective, the chatbot will continue to learn and expand its knowledge base. Security features like Flask-WTF and reCAPTCHA provide robust protection against potential threats.

The chatbot streamlines information access, reduces administrative tasks, and enhances the user experience. Plans may include expanding voice capabilities to more languages and integrating real-time chat for even more comprehensive support.

Chatbot Outcome: Check out the CampusGenie Bot setup. It's super neat and easy to use, and everyone, like rookies, their folks, and random guests, can get the hang of it with no sweat. Hit up the chatbot on the website or platform, and boom – it hits you back with a cheery 'hello' and asks what you want to know. This chat box works slick on any gadget and looks sweet thanks to some fancy CSS tricks. Just type your query, press enter, and our Flask-powered bot will quickly respond with helpful answers.
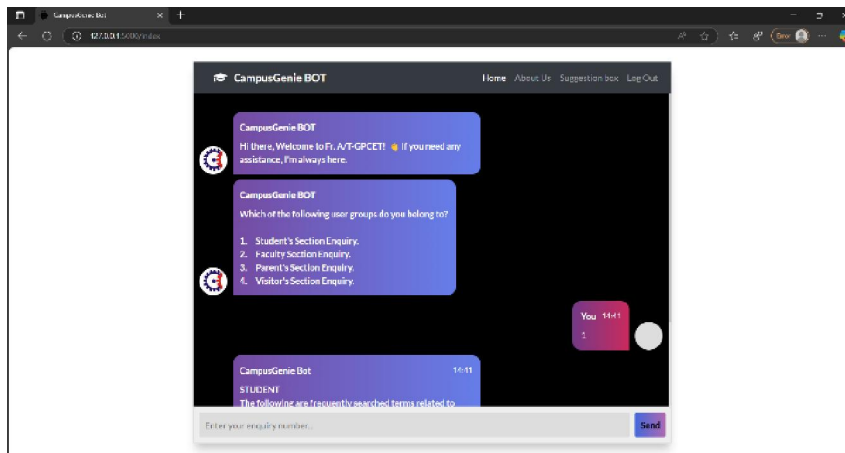
Fig. 2. Chatbot Outcome

Conversation History: Here, you'll find all the chats between users and the chatbot. The nifty bot scoops up questions thrown by users, then taps into its smarty-pants language skills to figure out what you're gunning for and hits you back with answers that make sense. Hey, and it's all over the map when it comes to the types of things it can handle, like:
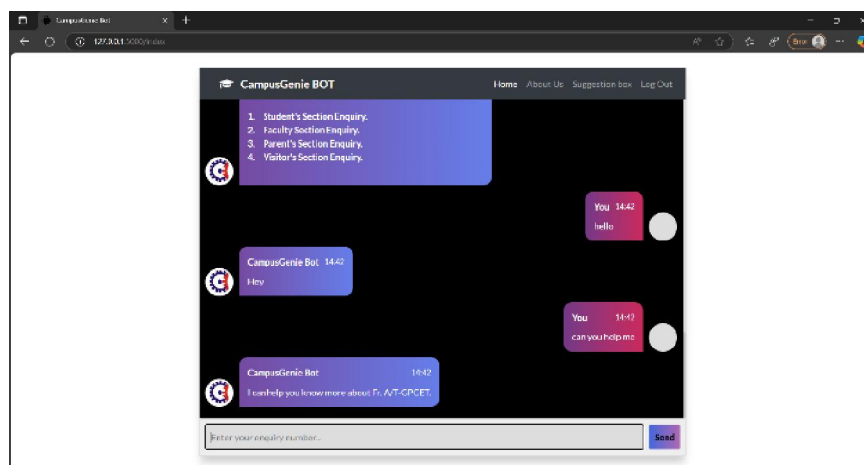

Fig. 3. Conversation in Chatbot

All About the Bot: Wanna know what's what? The "About Us" bit gives you the 411 on the folks behind the scenes and what this CampusGenie Bot is here to do. Built for busting out quick and dependable info about school stuff, it's all part of the grand plan to make campus life a breeze for students. You'll see many things like:
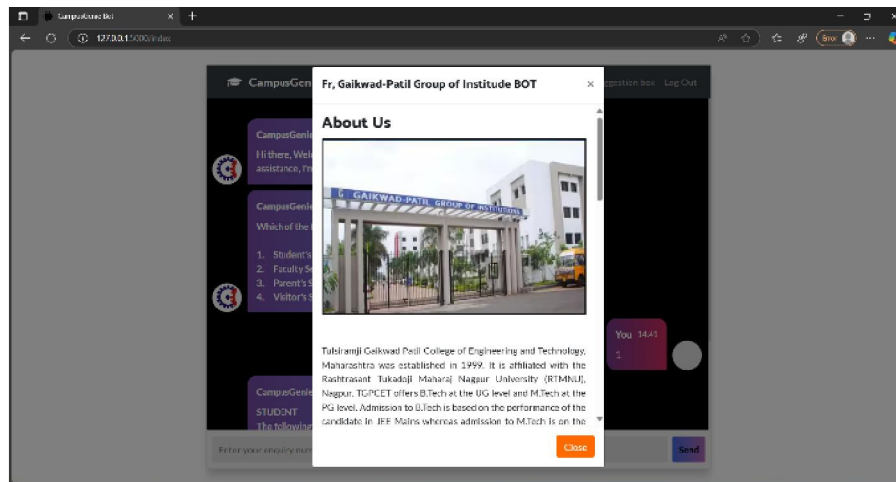
Copyright to IJARSCT

www.ijarsct.co.in

DOI: 10.48175/IJARSCT-25921

155

ISSN
2581-9429
IJARSCT

Fig. 4. All About the Bot

V. CONCLUSIONS

Wrapping it up, the CampusGenie Bot nailed its objective to make student questions easy to handle and communicate smoothly with users. This system showed solid skills in getting answers right, being easy and efficient to use, and staying secure. Still, it could get better at sorting out the tricky questions and keeping cool when many users hop on at once. By and large, the bot is a super handy gadget for bumping up how much students get involved and for getting the lowdown on important school stuff super quickly. Next, we aim to boost our language understanding, incorporate more comprehensive information, and scale up for broader implementation.

VI. ACKNOWLEDGEMENT

First off, we want to give a massive thanks to our project mentor, Ashwini Mahajan. Their insightful advice, calm guidance, and constant encouragement made a difference. We appreciate their intelligence and the valuable tips they shared that helped transform our chatbot into something functional and meaningful.

We're also deeply grateful to the exceptional faculty members in the Computer Science and Engineering Department for their invaluable support and guidance. A special mention goes to our school, Abha Gaikwad Patil College of Engineering at RTMNU University. They provided us with the resources, cutting-edge technology, and supportive environment needed to excel in this project. The equipment and the inspiring atmosphere have been absolute game-changers for aspiring professionals.

This project has been an incredible learning experience from start to finish, and we're deeply grateful to everyone who contributed to its success.

REFERENCES

[1]. Chatbot, https://en.wikipedia.org/wiki/Chatbot.Schantz, Herbert F., The History of OCR, Recognition Technologies Users Association, Manchester Center, Vermont, 1982.

[2]. P. Chenna, T. Rao, et al (2018). HFSS software is used to design a twin inverted L microstrip antenna for sustainable systems.

[3]. J. Quintero, an IEEE student member, and R. Asprilla, an IEEE member. Proceedings of the 2020 IEEE Thirty-Fifth Central American and Panama Convention: Towards an Efficient Voice-Based Chatbot (concapan xxxv).

[4]. Prof. K. Bala, Sayal, Sahil, " College Chatbot Management System Using A.I", International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056, p-ISSN: 2395-0072, Volume: 04 Issue: 11 | Nov-2017, pp 2030-2033

[5]. Amey Tiwari, Rahul Talekar, Prof. S. M. Patil, "College Information Chat Bot System", International Journal of Engineering Research and General Science, ISSN 2091-2730, Volume 5, Issue 2, March-April, 2017, pp

[6]. Sagar Pawar, Omkar Rane, Ojas Wankhade, Pradnya Mehta, "A Web-Based College Enquiry Chatbot with Results", International Journal of Innovative Research in Science, Engineering, and Technology, ISSN(Online): 2319-8753, ISSN (Print): 2347-6710

[7]. Prof. Suprita Das, Prof. Ela Kumar, "Determining Accuracy of Chatbot by applying Algorithm Design and Defined Process", 4th International Conference on Computing, Communication, and Automation (ICCCA), 2018, 978-1-5386-6947-1/18/2018 IEEE, pp1-6.

[8]. P. Nikhila, G. Jyothi, K. Mounika, Mr. C Kishor Kumar Reddy and Dr. B V Ramana Murthy on "Chatbots Using Artificial Intelligence", International Journal of Research and Development, Volume VIII, Issue I, January/2019, ISSN NO: 2236- 6124, pp 1-12