IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Telegram Chatbot To Access Pc Storage

Dr. Prerna N. Khairnar[1], Nikita Avhad[2], Maheshwari Daware[3], Gayatri Sonawane[4]

1Assistant Professor, Department of Computer Engineering, Sir Visvesvaraya Institute of Technology, Nashik, Maharashtra, India

2,3,4Department of Computer Engineering, Sir Visvesvaraya Institute of Technology, Nashik, Maharashtra, India

Abstract:

The growing interest in intelligent chatbots has surged in recent years, driven by advancements in artificial intelligence algorithms. This has led to numerous studies exploring emotional transitions and dialog structures. One notable application is in the medical field, where chatbots can assist with psychological assessments, clinical counseling, autism diagnostics, and complex cognitive modeling.

However, a common limitation of many chatbots is their reliance on web-based information repositories. While these sources provide reliable information, they often lack the nuanced emotional understanding necessary for meaningful interactions. This paper aims to address this gap by developing an intelligent chatbot that leverages natural language processing and the Telegram API.

Index Terms - Telegram API, chatbot, natural language processing, emotion

I. INTRODUCTION

Starting from the first chatbot developed in 1966, Eliza impersonated as a psychotherapist. Then, inspired by Eliza, Alice bot was developed in 1995. Smarter Child was developed in the previous decade and precursor of Siri and S Voice [1, 2]. Nowadays, chatbots have been popular as personal assistants to users, such as Apple's Siri, Microsoft's Cortana, Google Assistant, Amazon Alexa, and Samsung's Bixby [3]. Chatbot knowledge generally comes from a web-based information repository. The approach is reliable but not versatile as normally it does not contain emotions. Chatbots should provide responses based on user information and demonstrate suitable feelings with the advancement of artificial intelligence. The chatbot program stored words, sounds, feelings, and actions from unimodal analysis to multimodal integration to understand the user's psychological features. The analysis of emotional transformation can be used in communication to monitor the dialogue with the machine, prevent unusual feelings and improve the reliability and awareness of human-computer interaction [4]. A chatbot is an artificially smart chat agent that simulates a human-like interaction by allowing users to type questions, i.e., queries, and produce meaningful

answers to those questions in return [5]. Chatbots have been used in many applications, including education [6], mental health during the Covid-19 pandemic [7], customer service [8], tourism [9], and many others. A chatbot can be one of two types, the first type of architectural system is the retrieval model, a kind of rule-based interaction. The rule-based method is a predefined prototype from which the chatbot chooses the response relying on the input context. Such systems can not create new responses to the message. Constructing chatbot awareness is a time-consuming and challenging job besides the fact that it is not scalable due to the human intervention required. Deep learning techniques are used by the second type of chatbot architecture, such as proposed in [10, 11]. In addition, deep learning enables the system to interpret and convert a natural human language into a medium that the system can understand based on Natural Language Processing (NLP) [12]. This paper concentrated only on a text communicative agent or chatbot which can interact with the user using various natural language processing methods. A chatbot is designed in many ways, starting with a basic rule-based approach until more advanced through various machine learning techniques. In addition, the chatbot needs to be humanized for better user interaction. Various methods have been proposed to enhance user engagement with a chatbot, such as creating a context-conscious chatbot or embedding personality. In addition, emotion data helps improve the interaction between the software and individual being, which help in a reduction of misunderstandings [13]. Nevertheless, this paper aims to develop a chatbot prototype that can recognize emotion from text input and respond empathically.

II. PROJECT MOTIVATION

The need for effective remote file management solutions is becoming increasingly apparent, especially as more individuals and organizations operate in flexible work environments. Users frequently require access to their files from diverse locations, whether for professional responsibilities, academic pursuits, or personal projects. Traditional remote access methods, such as remote desktop applications, often involve complex configurations and may require dedicated software, which can be a barrier to entry for many users. A Telegram chatbot, therefore, emerges as an innovative solution that simplifies the process of file management, allowing users to interact with their PC storage effortlessly.

III. RELATED WORK

There are several previous studies on the use of Telegram. Jakobsen (2015) performed cryptanalysis on the Telegram communication. The author was able to analyse and depicts the security and encryption protocol in the Telegram. Sutikno et al. (2016) compared WhatsApp, Viber and Telegram. The result shows that Telegram offers better back-up feature and security then WhatsApp and Viber. The authors added that Telegram is the best messenger platform among those three apps. In the area e-learning, Hafiz (2015) integrates LMS e-learning and Moodle platform using MTProto open protocol. The Telegram bot, namely ELISA (E-learning integrated short announcement) will then reply to any request from students who need feedback of their work. In addition, the MTProto is able to support real-time online class discussion. One more work on Telegram bot was done by Rohim (2016). The author developed a chat bot using long polling method to share information on any offers and events from student outlet in a campus. However, with the increasing number of request that is sent to the bots, latency becomes an issue in that work. In our work, different communication method, namely Webhooks method, is used within a Telegram bot to overcome the latency issue when sharing information in campus.

IV. CASE STUDY AND REQUIREMENTS

Informatics Department in Islamic University of Indonesia (TF UII) takes the advantage of IT development to deliver the information to all academics staff and students. They use web portal and Facebook timeline as the main information sharing media. The main drawback is users do not frequently check such media to obtain real-time info. The proposed Telegram bot will be implemented in TF UII to provide better campus services. The Telegram bot is required to provide information such as: TF UII profile, upcoming events, and class or mentoring timetable. The bot will broadcast information to the registered accounts regularly. Figure 1 shows the general framework of the telegram bot. A staff from TF UII will regularly share the information gathered from portals and FB page to the students, staffs, and lecturers in the campus via the Telegram bot.

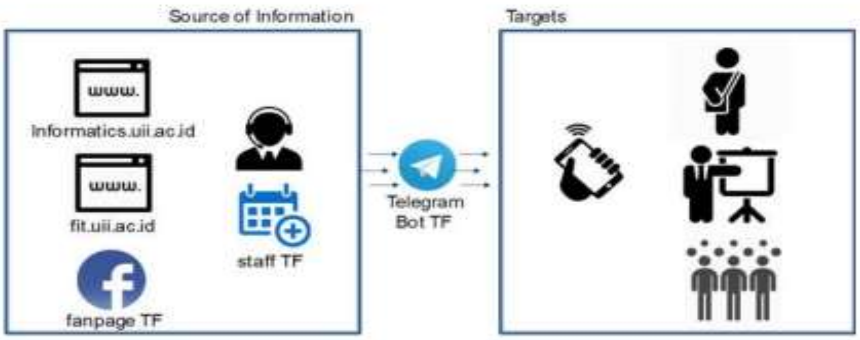

Fig. 1 :- General Framework of Telegram bot (https://tinyurl.com/45kz3z2n)

V. SYSTEM ARCHITECTURE:

At the heart of this project is a well-defined system architecture that seamlessly connects the Telegram bot to a local server, which acts as an intermediary between the chatbot and the user's PC file system. This architecture ensures that user commands are processed efficiently and that the appropriate file operations are executed in real time. The local server is responsible for handling requests from the bot and interfacing with the file system, ensuring smooth communication and data transfer.

VI. COMPARISON OF CHATBOT PLATFORMS

Chatbots for amusement, research, or commercial purposes can be built, as shown in fig. 1. They can be categorized into two types based on their development approach. One type is command-based bots, and the other is smart bots. Retrieval bots, which are manually coded by programmers, use user inputs to map specific questions to their associated answers. In contrast, smart bots rely on machine learning to communicate with clients. Rather than following a pre-set answer, intelligent bots anticipate responses based on context and past messages. This means that the more we use the chatbot, the better the responses become. research: emotional recognition and the appropriate with proper empathy. Safety mechanisms include diagnosing anxiety, identifying disturbances, tracking public opinion, assessing emotions, and recognizing emotional polarity [4]

The design of a chatbot consists of five stages. The first stage was the preliminary investigation to determine the essential criteria to boost a chatbot's naturality or believability to engage users. Many factors appear to be the key to improving chatbot or artificial person faithfulness. In user-chatbot interactions, emotion provides a vivid conversation. The second parameter is personality. The purpose of personality is to consider people's distinctive patterns of thinking, attitudes, and behavior. Personality provides somebody with a kind of identification as to how they feel and the world. Studies have shown that a personality gives the chatbot or the artificial human more complex responses, increasing faithfulness. Social interaction is the last variable that appeared to be the most important attribute for chatbots that identifies the way people are closely and effectively affected. Social relations are also the main factor in our community, and therefore the ability to comprehend and demonstrate social relations increases the faithfulness of chatbots. However, since the factors of social relations are not straightforward to assess and control, this research focuses only on the emotions and personality aspects of the chatbot. The last stage is the evaluation of the chatbot system to improve the designs.

VII. SECURITY MEASURES:

Given the sensitive nature of file operations, implementing stringent security measures is paramount. The bot includes user authentication protocols to ensure that only authorized users can access specific files and perform operations. Additionally, data encryption methods are employed to protect files during transmission, safeguarding user data from potential threats. These security features are critical in maintaining user trust and ensuring safe interactions with the bot. The need for effective remote file management solutions

is becoming increasingly apparent, especially as more individuals and organizations operate in flexible work environments. Users frequently require access to their files from diverse locations—whether for professional responsibilities, academic pursuits, or personal projects. Traditional remote access methods, such as remote desktop applications, often involve complex configurations and may require dedicated software, which can be a barrier to entry for many users. A Telegram chatbot, therefore, emerges as an innovative solution that simplifies the process of file management, allowing users to interact with their PC storage effortlessly and conveniently.

VIII. TECHNOLOGY STACK

To bring this project to fruition, a robust technology stack is essential. The primary programming language used is Python, known for its simplicity and versatility, which facilitates rapid development. Flask, a lightweight web framework, serves as the backbone of the local server, enabling it to handle incoming requests and process file operations effectively. Additionally, the Telegram Bot API provides the necessary tools for interacting with the Telegram platform, allowing the bot to send and receive messages seamlessly. The integration of libraries for file handling and data encryption further enhances the bot's capabilities and security. hese security features are critical in maintaining user trust and ensuring safe interactions with the bot. Regular audits and updates to security protocols are also planned to address emerging threats and vulnerabilities.

CONCLUSION

In summary, this paper presents a comprehensive overview of the design and implementation of a Telegram chatbot that enables real-time access to PC storage and file operations. By addressing a critical need for accessible remote file management solutions, this project highlights the innovative potential of combining chatbot technology with file management systems. As users continue to seek more efficient ways to interact with their digital environments, this research lays the groundwork for future advancements and applications in the field, contributing to the ongoing evolution of how we engage with technology in an increasingly interconnected world. The need for effective remote file management solutions is becoming increasingly apparent, especially as more individuals and organizations operate in flexible work environments. Users frequently require access to their files from diverse locations—whether for professional responsibilities, academic pursuits, or personal projects. Traditional remote access methods, such as remote desktop applications, often involve complex configurations and may require dedicated software, which can be a barrier to entry for many users. A Telegram chatbot, therefore, emerges as an innovative solution that simplifies the process of file management, allowing users to interact with their PC storage effortlessly and conveniently.

REFERENCE

1. M. A. Irawan, M. A. Rony, Mz. D. Anggraeni, and S. Aslamiyah, "Remote server telegram bot using long polling method," Jurnal Mantik, vol. 7, no. 3, pp. 1-8, 2023.
2. M. Idhom, R. Alit, H. E. Wahanani, and A. Fauzi, "Implementation system telegram bot for monitoring Linux server," in Atlantis Highlights in Engineering (AHE), vol. 1, Surabaya, Indonesia, 2018, pp. 1-8.
3. Hafiz M., (2015) "ELISA: E-Learning Integrated Short Announcement," Colloquium in Computer and Math. Sci. Education, p. 110.
4. Rochim H. N., (2016) "Rancang Bangun Telegram Bot pada Telegram Messenger," Universitas Gadjah Mada.
5. Sutikno T. et al., (2016) "WhatsApp, Viber and Telegram: which is the best for instant messaging?" Int. J. of Electrical and Computer Eng. (IJECE), 6(3): 909–914. http://doi.org/10.11591/ijece.v6i3.
6. R. Khan and A. Das, (2018) "Build better chatbots: A complete guide to getting started with chatbots," Apress.
7. H.-Y. Shum, X. He, and D. Li, (2018) "From Eliza to XiaoIce: challenges and opportunities with social chatbots," arXiv preprint arXiv:1801.01957.
8. C. Siebra et al., (2018) "Virtual assistants for mobile interaction: A review from the accessibility perspective," in Proceedings of the 30th Australian Conference on Computer-Human Interaction, pp. 568-571.
9. P. B. Brandtzaeg and A. Følstad, (2017) "Why people use chatbots," in International Conference on Internet Science, Springer, pp. 377-392.
10. X. Sun, C. Zhang, and L. Li, (2019) "Dynamic emotion modelling and anomaly detection in conversation based on emotional transition tensor," Information Fusion, vol. 46, pp. 11-22.
11. P. Smutny and P. Schreiberova, (2020) "Chatbots for learning: A review of educational chatbots for the Facebook Messenger," Computers & Education, vol. 151, p. 103862.
12. A. S. Miner, L. Laranjo, and A. B. Kocaballi, (2020) "Chatbots in the fight against the COVID-19 pandemic," NPJ Digital Medicine, vol. 3, no. 1, pp. 1-4.
13. M. Adam, M. Wessel, and A. Benlian, (2020) "AI-based chatbots in customer service and their effects on user compliance," Electronic Markets, vol. 9, no. 2, p. 204.
14. G. Sperlí, (2021) "A Cultural heritage framework using a Deep Learning based Chatbot for supporting tourist journey," Expert Systems with Applications, p. 115277.
15. M. Dhyani and R. Kumar, (2021) "An intelligent Chatbot using deep learning with Bidirectional RNN and attention model," Materials Today: Proceedings, vol. 34, pp. 817-824.