

# A Chat Boot UI with Blockchain

M Gowtham, Anthoniraj Amalanathan

**Abstract:** A bot is defined as software capable of performing an automated task. Chat-bots perform automated tasks through an interface that humans can interact with. Some chat-bots operate off of predefined scripts and are only capable of handling a limited amount of specific questions. AI chat-bots use a combination of machine learning and what's known as natural-language processing. Machine learning employs special algorithms that analyze input data and identify patterns within that data—the more input data it has, the more patterns it identifies and the smarter it gets. With the advancement in artificial intelligence and natural language processing, AI chat-bots are now capable of more complex interactions. Combine blockchain technology with AI chat-bots and you get an automated way of managing those assets in a trusted and secure manner. The proposed chat-bot which automatically gives immediate responses to the users request there by one can retrieve, upload files by means of authentication and validation of the request to access the stored files by comparing the hash of the stored file in blockchain, using this Artificial Intelligence Markup Language (AIML), BOTUI a framework coupled with blockchain which praises business transactions using AI powered chat-bots will be the future.

**Index Terms:** AIML, BOT UI, AI, BLOCKCHAIN

## I. INTRODUCTION

The advancement of technology in the field of communication has led implementation of various autonomous systems which helps in human to simplify work flow one such is Chat-bot, which incorporates human activities such as Decision support system, natural language processing etc, With these, in other hand the rapid growth of Artificial Intelligence makes the chat-bot to analysis and learn the flow context of the required task with help of languages like AIML. These days there are hybrid of natural language and intelligent systems which has the ability to understand human natural language. These systems has the ability to keep on update their knowledge base with help of connected Internet and learn themselves to appropriate whatever the task and will have readily answerable engines. The chat-bot was often aimed or proposed as an entertainment. The system of such chat-bot is simple as it is pre-programmed. One of techniques used in such model is pattern matching. The chat-bot would try to match the pattern in the input sentence with knowledge base.

Another case of a prominent and latest bot is ALICE (Artificial Linguistic Internet Computer Entity), It was created by Wallace in 1995, roused by ELIZA. ALICE

depends on a straightforward example coordinating calculation: it utilizes design for info and yield and makes utilization of recursive systems to apply diverse guidelines. It utilizes Artificial Intelligence Markup Language (AIML), which encourages for engineers to define the bot's squares for talk bots information. From the underlying endeavors with ELIZA and ALICE, to build up an "intelligent" agents which completely interfaces with people utilizing common language, bots have been progressively utilized in numerous fields. They have been conveyed in web based business applications, as Nicole, a menial helper with client administration undertakings, or Anna by IKEA; in instruction, as CHARLIE, a chatbot which enables understudies to speak with the web based learning stage INES, or TQ-bot, which is created for understudy mentoring and assessment. Blockchain systems makes a shared system, in which hubs/clients of the connection, are interconnected, with no single purpose of control. Thus, no intermediaries or direct association between members engaged with a transaction. In open blockchain, hubs can leave or join whenever. In private blockchain, hubs must be welcome to join what's more, can leave whenever with notice. The Merkel tree is the essential convention utilized by blockchain and is an imperative piece of blockchains information uprightness. The Merkel Tree distinguishes any progressions to any information inside a square, by again running the procedure of all the transaction and thinks about the hash to the first hash. Smart contract systems like Ethereum are high trustworthiness programmable database layer for decentralized applications. Inter Planetary File System (IPFS) has turned into a mainstream stockpiling layer for decentralized applications. It is a shared information circulation convention where hubs in the IPFS organize structure a distributed file system.

## II. LITERATURE SURVEY

The chat-bot is the current ladder between various messaging and application frameworks; The user need not install various application or visits various websites to get the things done or to access the information. As the result of these technologies the way people live and work is made simpler, but when these chat-bot are incorporated in daily life it might be highly inherent security risks associated with information leakage. Though with its disadvantage chat bot are now growing day by day with various security as well as high end languages such as AIML. As chat bots are hosted in web and standalone apps, they are more vulnerable to the well-known web attacks such as phishing, whaling, CSRF (cross-site request forgery), and click jacking. So a brief study of chat bots are done by the following.[1] explains various applications with Artificial intelligence based chat-bot.

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The paper speaks about applications using AIML chat-bot , where human intervention to interact with user is reduced and an AI bot gives solution to their problems. In [2] Wei Yun Gang et al They defines various prospects of the Chinese Intelligent Chat bot. They faced issues like lack of dataset and Chinese segmentation system during development of the project.[3] Salvatore La Bua has developed a framework with help of LSA. He coupled LSA to huge data sets to relate words in the vector representation of corpus. [4]Hadeel Al-Zubaide and Ayman A. Issa developed an ontology based model that gives higher effect on versatility and interoperability in various domains.[7]A chatbot using Knowledge in databasewas proposed by setiaji et al,where they used a RDBMS for storing knowledge and the application works on the program stored in the database and which has an interpreter which employed as a stored program of functions and sets for pattern-matching requirements.[8]At el thomas N T proposed a framework where AIML is applied for answering FAQ related query and LSA is used for other operations related queries.

### III. PROPOSED METHOD

The overall proposed system consists of three main modules and it is deployed in a local host .The modules are as follows USER , SECURITY , MAIN Module .The user module is used for basic authentication of registered users who are authenticated by means of various integrated security mechanisms such as passport for login and the security module consists of core security mechanisms to prevent web attacks such as CSRF and other attacks through post and get ,we just serializing the users and corresponding request. The main module consists of the BOT-UI , Ethereum/swam nodes and lastly the IPFS storage as shown in Fig.1.

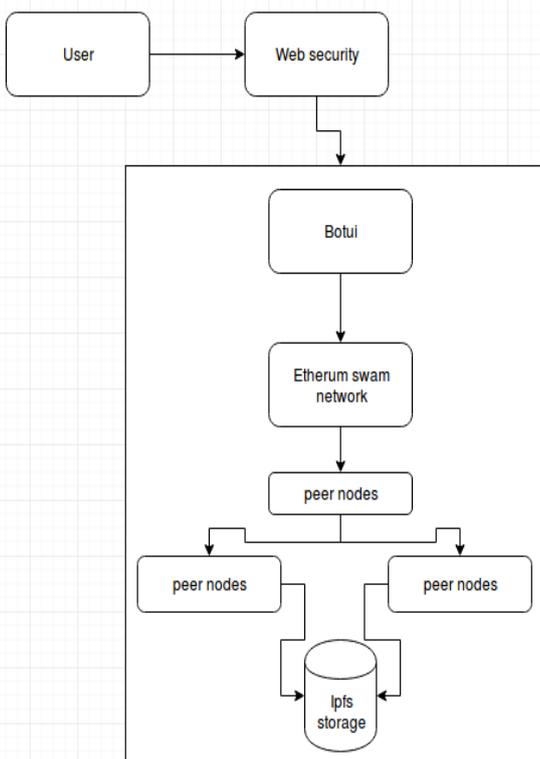


Fig 1. Overall deployment of proposed System

The systematic flow of the proposed method as shown in Fig.2 is as follows:

1. The user needs to register with the chat-bot to enable the service
2. Then after successful registration the user is prompted to start chat with bot
3. The bot will start servicing either uploading or retrieval of the corresponding image which the user requests.
4. Then the bot will make use of Ethereum/swam nodes for p2p and to store the image if the user request is upload.
5. The use of these nodes is that it will have a hash value for each storage of images.
6. If the users request for the retrieval of the image he needs to enter the hash value which can be found in the search option were while storing with corresponding name to the file a hash value is generated.
7. User logs out of the chat-bot service .

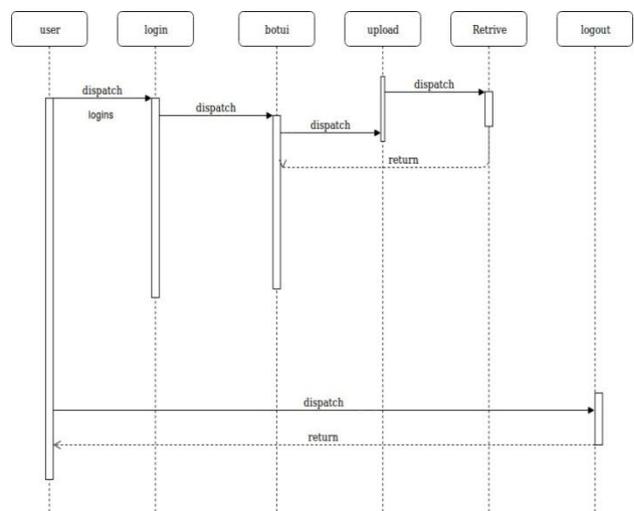


Fig- 2. Overall Flow of proposed System

### IV. EXPERIMENT

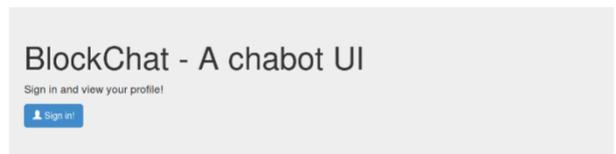


Fig 3 (a). Homepage of the bot

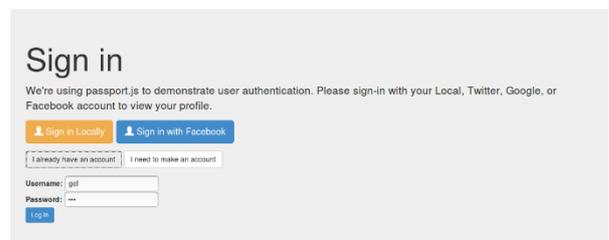


Fig 3 (b). User registration and login

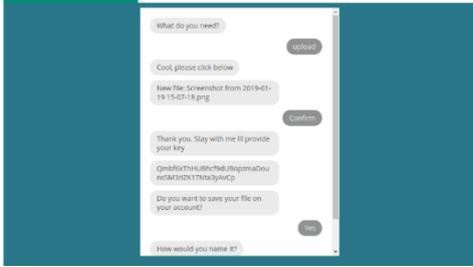


Fig 3 (c). Uploading file with help of chatbot

## V. RESULT

Through various attack such as ddos we have prevent the webpage from csrf attack as well from the XSS attacks, with the use of blockchain for storage helps in preventing from data tampering of the stored files in the IPFS storage. The efficiency of the bot is also measured based on its interaction, Fall back rate, confusion triggers and finally the conversational flow rate

## VI. CONCLUSION

By surveying and analyzing the various chat-bot mechanism, the future of AI with security mechanisms will lead the user requests in a secure way of performing the request. The bot used in the above proposed system implements the same with added mechanism of blockchain for better security approach towards the betterment of the system. The system is also not prone to web attacks such as CSRF or XSS as the system is hosted in web. The same system can be also used for banking purposes in the near future by means of using Digital hyper ledgers in the blockchain to maintain a time stamp of transactions with a anonymous nodes of networks. The proposed solution also has some shortcomings which can be addressed in upcoming enhancement of this solution.

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## AUTHORS PROFILE



**M Gowtham** Currently pursuing MTech in information security under Vellore Institute of Technology(VIT), vellore, Have worked on mitigation of SDN ,Ddos attacks Developed firewalls for sdn networks , have developed decentralized apps for blockchain devs .



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