Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

NOTY BOT - A Personal Assistant that Integrates the Updates

[1]J. Kanimozhi, [2]V. Swathilakshmi, [3]P. Bhavani, [4]V. Vijayalakshmi

[1,2,3,4] Department of Computer Science and Engineering, Sri Manakula Vinayagar Engineering College, Puducherry, India
E-mail: [1]janathakani@gmail.com, [2]swathilakshmi60@gmail.com, [3]bhavani.smvec@gmail.com, [4]vivenan09@gmail.com

ABSTRACT

Chatbot otherwise called chatterbot chips away at man-made reasoning used to invigorate the discussions among human and machine (PC and Mobile). It goes about as an associate which conveys through instant messages. NOTY BOT (Notify) is an android application which is prepared utilizing a calculation of man-made consciousness for managing client inquiries all the more adequately contrasted with people. It gives the right yield to the client inquiry by investigating the watchwords. The application also receives the employee's and users query it analyses the query with the technologies of artificial intelligence which is trained to it. In our Notybot we use Dialogflow and firebase technologies that generate the results accurate and fast. The major advantage of our NOTBOT is the integration of different fields such as Social Media, Health tips and scheduling in a single application. Thus, this platform increases the productivity of an employee without affecting his/her interests.

Keywords: Chatbot, Dialogflow, Firebase, Java, Notybot, Sharemarket, Sports, Twitter.

1. INTRODUCTION

Chatbots are trade for human support of the client. The interest for chatbot is expanding every day. An organization needs to connect with its client proficiently without labor and this is the place the chatbot assumes a vital job. Clients as often as possible will have inquiries to ask them and they need their chatbot to answer effectively. An easy to use visit bot is one that will give pertinent and less intricate responses to the asked for question. A chatbot must most likely refresh its learning at whatever point another report is sustained to it.

The essential go for making a Counterfeit Savvy chatbot is to cooperate with a client in an increasingly current and smooth way, chiefly to keep away from blunders that are caused when an individual is taking care of the demand. Chatbots are made by actualizing the ideas of Computerized reasoning and AI. Computerized reasoning Chatbot is a chatbot that has been customized and organized to react to client's question in a smooth and successful way. It comprehends the regular language of people through Natural Language Processing (NLP).

It is fabricated utilizing a few models to guarantee that it can dissect the question and react with applicable answer in brief timeframe. Chatbot can refresh itself if another record is sustained into chatbot. Chatbots are new instruments intended to disentangle the communication among people and PCs have hit the market: Chatbots or Remote helpers. In banking, chatbots and menial helpers are a portion of the business' most up to date apparatuses intended to streamline the connection. Chatbot is used in many different fields like finance, travel, media hospitality, healthcare, ecommerce insurance and lot more which are shown in fig 1 namely Utilizations of chatbots in different fields.

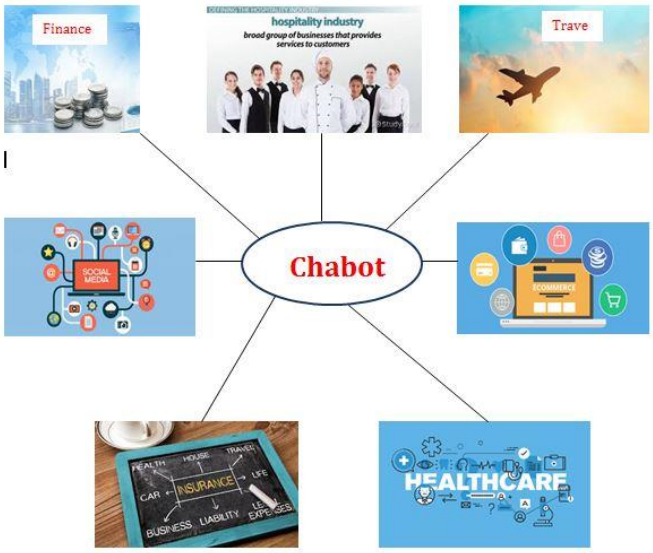


Fig 1. Utilizations of chatbots in different fields

Section 2 describes the prior work done on chatbot in different technologies and in section 3 we describe the implementation of chatbot using java in different fields with real-time applications and section 4 gives the result analysis of the implement work where the implemented work is compared with the existing systems and finally conclusion is given in section 5.

2. LITERATURE SURVEY

Chatbot has turned out to be increasingly prominent in business bunches right now as they can decrease client administration cost and handles numerous clients at once. Yet, yet to achieve numerous undertakings there is have to make chatbots as effective as could reasonably be expected. There is a plan of a chatbot, which gives a productive and exact response for any question dependent on the dataset of FAQs utilizing Man-made consciousness Markup Language (AIML) and Idle Semantic Examination (LSA) [1]. In the light of the

Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

equivalent, a Man-made reasoning AI (AIML) driven chatbot, that is energized with investigation's crude information, that will empower bot-clients to get business bits of knowledge by simply composing in the question [2].

There is also a concise survey of certain applications which are utilized AIML chatbot for their conversational administration. These applications are identified with social legacy, e-learning, e-government, web base model, discourse display, semantic examination system, cooperation structure, humorist master, arrange the board, versatile measured engineering [3]. Chatbots or conversational agents are computer programs, which interact with users using natural language through artificial intelligence in a way that the user thinks he is having dialogue with a human [4].In this quick moving information driven world, it is fundamental that we attract the exact experiences to settle on the correct choices at the opportune time. As far as online sites, there are numerous web examination instruments that will give us execution reports. To make the conversation with chatbot more meaningful with regards to the users previous chat sessions, user specific session ability has been added to the chatbot architecture. An open source AIML web based chatbot has been modified and programmed for the use in health informatics domain. The chatbot has been named VDMS - Virtual Diabetes Management System. It is intended to be used by the general community and diabetic patients for diabetes education and management [5]. The advancement of conversational operators for social insurance applications has pulled in impressive enthusiasm for late years. A conversational operator can be a compelling accomplice, as opposed to a device, by giving data to increment clients' expectation to interface with the framework and acknowledge the wellbeing related suggestions.

Care groups are important for giving educational what's more, enthusiastic help to those with specific wellbeing conditions. Broad proof demonstrates that bunch based mediation can prompt wellbeing enhancements for participants. Online social networks can supplement other strategies to disperse wellbeing related data and increment inspiration for social changes [6]. Chatbot will help sightseers to get data on which conceivable destinations they have to visit ideally on the off chance that they are under restricted opportunity time imperatives [7]. Administration Robot can recount stories to different gathering of people who need a robot to go with, for example, youngsters, understudies, and old individuals [8].

The reason for this android application is to give instructive based Chatbot to visually impaired peoples. It will give a response to the instructive based questions asked by the outwardly hindered individuals. They can without much of a stretch dispatch the application with the assistance of google voice search. Thus it might bolster discourse acknowledgment for the client input [9]. A chatbot is a system that performs intuitive converses with the clients through informing applications, e.g., Slack, Facebook envoy, LINE, and others [10]. The need and utilization of virtual help are ever expanding. They have wide scope of uses in the fields of diversion frameworks, logical research and business applications and can acquire an extreme change the way human computer association happens. The usage of Natural Language Handling (NLP) procedures to improve the curiosity and collaboration of chatbots by adjusting Stanford CoreNLP structure for coordinating the NLP systems of Named Entity Acknowledgment (NER) to chatbots[11]. The chatbots could also be used in to give the creation of the meds and their endorsed employments. It encourages them to take the right treatment [12] [13] [14]. Thus chatbots could be used in for various fields in health, entertainment, web search, scheduling and so on. Here in our application, chatbot is being used over for various purposes. Using NLP technology sports news. Share market updates and health tips are given to the users in [15].

3. NOTYBOT (Chatbot) USING JAVA

A Chatbot is basically software with which we can chat with. If we use it right, our life will be much easier and instead of searching something on the internet, you can simply ask chatbots what you want to know. Although chatbot can't think like a human yet, they still enable us to directly interact with the brand we're interested in, which was previously close to impossible.

Java can provide us with all the high-level features that we need for AI projects. If we want to build an AI chatbot, Java is probably the best language we can use because it offers an easy way to code algorithms, and AI is full of them. It also runs on the Java Virtual Machine technology and we can use it to create an application that runs on any platform. Java has the most important features for a sophisticated interface, like facilitated visualization and standard Widget toolkit.

Dialog Flow is used to give a reminder of the meeting schedules to the employees, the form generation is used over to acquire the employee's personal interests and sports. The other services are used to give the current updates in social media and share market. A Chatbot can be used for many purposes; our Chatbot is used to help the employees to increase their productivity without affecting their personal interest. *Dialogflow* (Previously known as API.AI) is where the magic happens. It is working on natural language processing and also backed by Machine Learning. *Dialogflow* the whole conversation take place. *Dialogflow* is backed by Google and runs on Google infrastructure, which means you can scale to millions of users.Our bot integrated with the following applications or fields.

Web scraping is a technique used to extract large amounts of data from websites whereby the data is extracted and saved to a local file in your computer or to a database or to a database in table (spreadsheet) format. It is a form of copying, in which specific data is gathered and copied from the web, typically into a central local database or spreadsheet, for later retrieval or analysis.

The library used in our application is Jsoup. Jsoup is a Java library given for working with real-world HTML. Jsoup is a Java html parser. It is a library (java library) that is used

Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

to parse html documents. Jsoup, concentrate and control information from URL or HTML documents by giving a programming interface. It provides a very convenient API for extracting and manipulating data, using the best of DOM, CSS, and Jquery-like methods.

Notybot Architecture

The architecture of the Notybot gives an easy flow of understanding the features included in the application. The main highlight of this application is that the employees could get frequent updates on share markets, top trending information in twitter. For the share market, twitter and sports updates we use firebase.

Notybot gives the employee a convenient and user-friendly updates and schedules for the day. The application also receives the employee's query it analyses the query with the technologies of artificial intelligence which is trained to it. In our Chatbot (Notybot) we use Dialogflow and firebase leading natural language processing capabilities, features for bot applications that handles enterprise grade solutions for employees and more. Using the above technologies like Web scraping, respond features this application generates the results accurate and fast. Thus, this platform increases the productivity of an employee without affecting his/her interests.

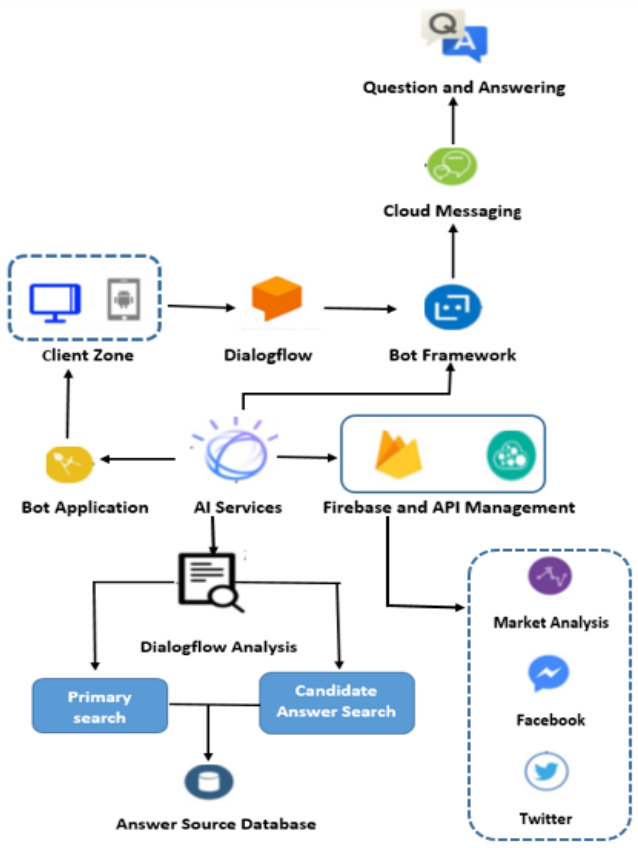


Fig. 2 Architecture and workflow of Notybot

Fig 2 shows the architecture of the proposed Notybot. The Notybot application has the following features:

2.1 Health tips
2.2 Sports updates
2.3 Twitter updates
2.4 Share market (stocks)
2.5 Scheduling
2.6 Web search

2.1 Health Tips

A digital personal assistant namely Chatbot could help physicians, nurses, patients or their families. The primary aim of our application is to analyse relationships between preventions or treatment techniques and patient outcomes. Better organization of patient pathways, medication management, help in emergency situations or with first aid, offering a solution for simpler medical issues without going to hospital [15].

These health tips are imploded using dialogue flow. Notybot is used to process the user queries and respond them efficiently by manipulating the data's in the database. The application also receives the employee's query it analyses the query with the technologies like Dialogflow and firebase which is explained above. In this, Dialogflow and firebase leading natural language processing capabilities, features for bot applications that give the responses or solutions for employees as a result of user query.

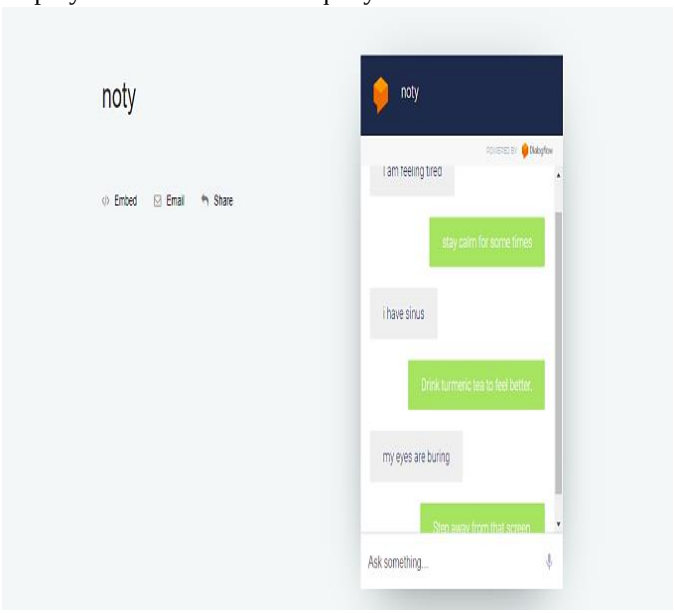


Fig.3 Dialogue between Notybot and a user (in webapp)

The above fig. 3 shows the Sample dialogue provided between Notybot and user in webapp, in which the user will give a query and the Notybot will give solution to their query. It is updated in PC system and also in android application.

2.2 Sports Updates

Our Notybot gives you complete satisfaction of

Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

watching live actions or viewing live scores while on the go as notification, packed with latest news and game schedules. It brings users the latest news and information from the world of sports from inside the sports field including live scores, breaking stories with quick updates and variety of sports events [15].

Web scraping is a web page that involves fetching it and extracting from it. Fetching is the downloading of a page .We have a feature called response. Here we check the previous update with the newly arrived update. If it matches, then it maintains the old one as the latest update. If they are different then it takes the new update and maintains it as the latest update and notifies the user.

Thus, this platform increases the productivity of an employee without affecting his/her interests. The same logic is used in all three services sports, twitter, and share-market.

Fig. 4 Notybot displays List of updates about sports

Fig.5 Sports updates by Notybot

In health tips the questions are raised by the user and the solution will be given by the Notybot. But in sports updates the updates are taken from Google and given to users every day without any query done with the help of web scraping. Fig 4 shows the daily new updates on sports and when we click on the new updates; it will be directed to the news page shown in fig 5.

2.3 Twitter Updates

In this feature of Notybot, we will get a complete satisfaction of watching trending updates on twitter while on the go as notification, packed with latest news and current issues. It brings users the latest news and information from the social media including breaking stories, issues, affairs, controversy with quick updates and variety of events.

Web extraction is utilized to get the information as referenced previously. In the games module, dialogflow and firebase are utilized and that are clarified as above.

Fig .6 Notybot Connecting to twitter

Fig. 7 Updates of twitter in notybot

In fig. 6 it is shown that the Notybot is connecting with the

Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

Twitter and in fig.7 Twitter updates given to the user by Notybot.

2.4 Sharemarket Updates

In sharemarket update feature we are giving the user with complete satisfaction of watching trending stock market updates while on the go as notification, packed with latest news. Starting the app will land us on Live and real time sensex and nifty point's updates and scrolling down we will find the top gainers, top losers, and top movers of the day. It will help us to track stock market and will also empower you to trade stocks from the app itself [15].

In this share-market module the process are involved as like the twitter and sports and it is given in the above fig.8 (a) and 8 (b).

8(a)

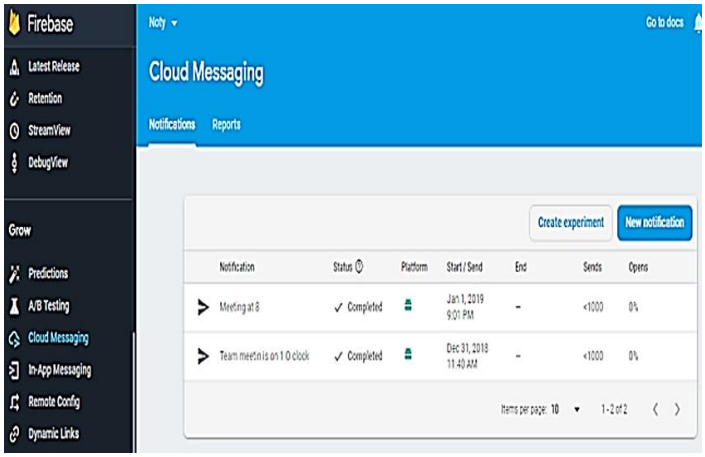
8(b)

Fig. 8(a), (b) Share-market tending newsfeeds by Notybot

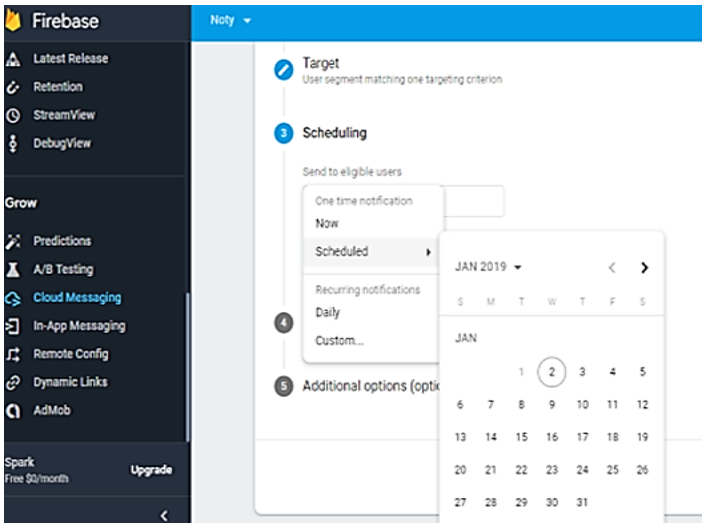
2.5 Scheduling

Another service given by Notybot is scheduling feature. In this we schedule different meetings and make sure it reaches the entire user. And this notification can be sent immediately or at a scheduled time or we can notify everyone, every day, particular days the time of the daily meeting. And the main highlight in this is that we can monitor the activity. We can get a count of how many have seen, to how many the notifications has reached.

In scheduling, the process deals with the applications like dialogflow.



9(a)



9(b)

Fig. 9 (a), (b) Message send by admin to group of employees in firebase

Volume 9, Issue 1
February 2020

ITEE Journal
Information Technology & Electrical Engineering

ISSN: - 2306-708X

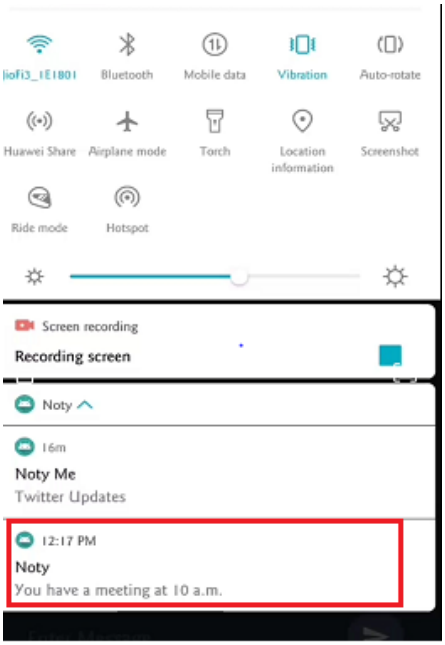


Fig. 10 Scheduling message notification by Notybot

In scheduling feature users can schedule the meeting and the information will be sent as a message to group of people which is shown in fig. 9 (a) and 9 (b). The meeting notification will be sent by notybot to the user as shown in fig. 10.

2.6 WEB SEARCH

In Notybot web search option is also included to experience more sophistication. A web search engine is a software system that is designed to search for information on the World Wide Web. The information can be a mix of web pages, images, videos, info graphics, articles, research papers and other types of files. When the query is recognized by the application, the Query is processed and the bot provides the response.

In this feature the user can type a query or we can search by voice also. It includes the speech recognition feature to becomes so handy for the employees to use it during their working hours as shown in fig. 11.

Figure11. Speech recognition for web search

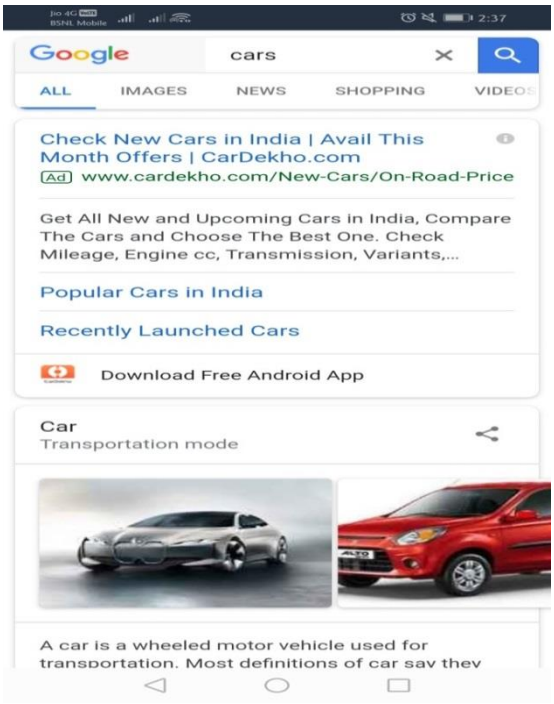


Figure 12.Web search result in Notybot

From the web search it directs us to the needed content shown like in fig. 12 web search result in Notybot.

4. REUSLT ANALYSIS

Chatbot (Notybot) is implemented to meet the employee needs and frequently intimate the employee about his/her schedules, interests, health, the happenings in the corporate world and also must be able to answer the queries more efficiently. A user-friendly chatbot is one that will provide relevant and less complex answers to the requested query. It is implemented to interact with an employee in a more modern and smooth way, mainly to avoid errors that are caused when person is handling

the request. A snapshot of the proposed Notybot is shown in the above Figures from Figure.1 to 12 respectively.

Points of interest of notybot

The benefits of our application are as per the following:

A. Reduced Cost

The application is indeed a cost efficient as it provides all of its services in a single bot application.

B. Service Throughout Day

The application is made user-friendly and it could be access at anytime from anywhere.

C. Integrative Environment

The application is a platform that is a collaboration of various services from various fields that is integrated and provided to the user in a single Chatbot.

D. Memory Usage

As there is an incorporation of different elements in a solitary application, the memory utilized for this application is insignificant when contrasted with different applications.

5. CONCLUSION

Chatbots are basically an upgrade to a user interface, as they bring the most basic type of human interaction into the digital environment. A simpler, faster and more intuitive user interface results in an overall better user experience, which is one of the key factors for educational growth. Monitoring the relationship between User Experience and Chatbots is doable through smart qualitative analytics. The significant preferred standpoint of our Notybot is the coordination of various fields, for example, Social Media, Health tips and planning for a solitary application. The results of all the social media and web browsing contents are given via Notybot which are shown in the screen shots above in the implementation section. Thus, a user-friendly experience can be provided for the employee's in the company to ensure productivity without affecting their interests with the help of Notybot.

REFERENCES

[1] Benotti, L., Martínez, M. C., & Schapachnik, F. (2018). A Tool for Introducing Computer Science with Automatic Formative Assessment. *IEEE Transactions on Learning Technologies*, 11(2), 179–192. http://doi.org/10.1109/TLT.2017.2682084

[2] Wang, H., Zhang, Q., Ip, M., & Fai Lau, J. T. (2018). Social Media-based Conversational Agents for Health Management and Interventions. Computer, 51(8), 26–33. http://doi.org/10.1109/MC.2018.3191249

[3] Liu, B., Xu, Z., Sun, C., Wang, B., Wang, X., Wong, D. F., & Zhang, M. (2018). Content-Oriented User Modeling for Personalized Response Ranking in Chatbots. *IEEE/ACM Transactions on Audio Speech and Language Processing*, 26(1), 122–133. http://doi.org/10.1109/TASLP.2017.2763243

[4] Pérez-Soler, S., Guerra, E., & De Lara, J. (2018). Collaborative Modeling and Group Decision Making Using Chatbots in Social Networks. *IEEE Software*, 35(6), 48–54. http://doi.org/10.1109/MS.2018.290101511

[5] Satu, M. S., Parvez, M. H., & Shamim-Al-Mamun. (2016). Review of integrated applications with AIML based chatbot. *1st International Conference on Computer and Information Engineering, ICCIE 2015*, 10, 87–90. http://doi.org/10.1109

[6] Hussain, S., & Athula, G. (2018). Extending a conventional chatbot knowledge base to external knowledge source and introducing user based sessions for diabetes education. Proceedings - *32nd IEEE International Conference on Advanced Information Networking and Applications Workshops, WAINA 2018*, 2018–January, 698–703. http://doi.org/10.1109/WAINA.2018.00170

[7] Ranoliya, B. R., Raghuwanshi, N., & Singh, S. (2017). Chatbot for university related FAQs. *2017 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2017*, 2017–January,1525–1530. http://doi.org/10.1109/ICACCI.2017.8126057

[8] Rahman, A. M., Al Mamun, A., & Islam, A. (2018). Programming challenges of chatbot: Current and future prospective. *5th IEEE Region 10 Humanitarian Technology Conference 2017*, R10-HTC 2017, 2018–January, 75–78. http://doi.org/10.1109/R10-HTC.2017.8288910

[9] Gunning, D. (2017). Explainable Artificial Intelligence (XAI): Program Update Novmeber 2017. *Defense Advanced Research Projects Agency (DARPA)*, 1–18. Retrieved from https://www.darpa.mil/attachments/XAIProgramUpdate.pdf

[10] Anwar, A., & Hassan, S. I. (2017). Applying Artificial Intelligence Techniques to Prevent Cyber Assaults. *International Journal of Computational Intelligence Research* ISSN, 13(5), 973–1873. Retrieved from http://www.ripublication.com

[11] Liu, J., Kong, X., Xia, F., Bai, X., Wang, L., Qing, Q., & Lee, I. (2018). Artificial intelligence in the 21st century. *IEEE Access*, 6, 34403–34421. http://doi.org/10.1109/ACCESS.2018.2819688

[12] Bani, S. B., & Singh, A. P. (2017). College Enquiry Chatbot Using A.L.I.C.E. *International Journal of New Technology and Research (IJNTR)*, 3(1), 64–65. Retrieved from https://www.ijntr.org/download_data/IJNTR03010029.pdf

[13] Sharma, V., Goyal, M., & Malik, D. (2017). An Intelligent Behaviour Shown by Chatbot System. *International Journal of New Technology and Research*, (4), 52–54. Retrieved from https://www.ijntr.org/download_data/IJNTR03040071.pdf

[14] Singh, M. S., & Choudhary, P. (2017). Stroke prediction using artificial intelligence. *2017 8th Industrial Automation and Electromechanical Engineering Conference, IEMECON 2017*, 7(3), 158–161. http://doi.org/10.1109/IEMECON.2017.8079581

[15] Kanimozhi, J., Satya, B., (2019). Javabot - Chatterbot Using Java to Assist Healthtip, Share market and Sports Updates. *International Journal of Application or Innovation in Engineering & Management (IJAIEM)*, 8(4).