Health Care Assisting Chatbot for symptoms and dosage prediction using IoT

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Abstract

Health care systems have become an irresistible market for companies developing chatbots based computer programs for patients and doctors. Healthcare system which energetically interacts with aged people/patients to gather information, monitor health condition and provide support, especially in case of post-hospital situations or in the home environment. Chatbots plays a leading role by including the function of vital helper and bridging the gap between patient and doctor. Powered by AI and machine learning, chat bots are forecasted to save health care cost when used in place of human or help them as an early step of helping to evaluate a condition and providing self-care recommendation. The proposed idea is to develop a chatbots system based on artificial intelligence which helps patients to figure out the disease (branded or unbranded) and it also acts as a sleep coach. The designed system can describe or predict the possibility of the disease based on the sign of sickness and give available treatments, even very complex diseases where the patient have no knowledge about the sign of sickness. This system helps the patient to take proper medication and it is very user-friendly.

Keywords: Healthcare, medicine, disease, dosage, prediction, chat bots.

1. Introduction

Healthcare monitoring through Smartphone has been increasing quickly for the last few years, due to its widespread and well-known nature. Even poverty is the major context of India. Majority of people's income depends on food and daily wages. The public health service is not enough because the hospital services are mostly in the cities, where only 25% of one billion groups. So the cost of looking for such care is also increasing. The lack of right to health care is the main reason why the health status of the Indian population is disappointing.

Fig. 1 Picture representing healthcare applications

The healthcare market in India is based on supply-caused demand and keeps growing geometrically, especially in the factor of new technologies. There are huge number of smart devices and apps as shown in Fig. 1, out today that track every aspect of our fitness journey and monitor us. In which the Chatbots in health have a history of working well together. Chatbots are a step above these devices as they create conversational environment where the user is encouraged to talk about their health issues. Market research estimates that worldwide chatbot market will reach $1.23 billion by 2025 as shown in Fig 2. Healthcare has become an attractive market for companies developing chatbot computer programs for patients and doctors.

Most current and newly appearing cases focus on checking patient signs of sickness. Specifically natural language processing is used to help (identify its disease or a cause) a user based on the sign of sickness as he or she provides.
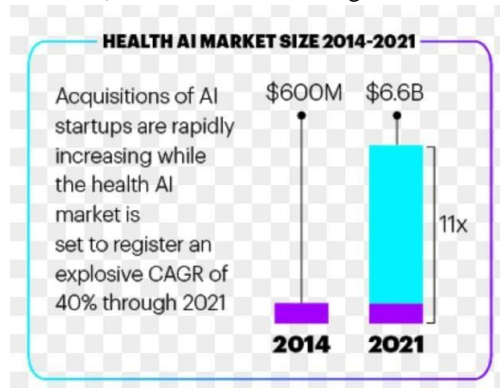

Fig. 2 Picture predicting healthcare market

2. Proposed System

The proposed System has the following features added in it: a) Constructing an easy and interactional real-time chat system b) The dedicated system which can solve all the questions related to medicines. C) Designed in such a way that it should work in supporting surface devices. d) Effective sign of sickness and disease prediction. E) Age-based dosage f) Prediction methods of chatbots g) can easily be integrated and upgraded. Constructing an easy and interactional real-time chat system:
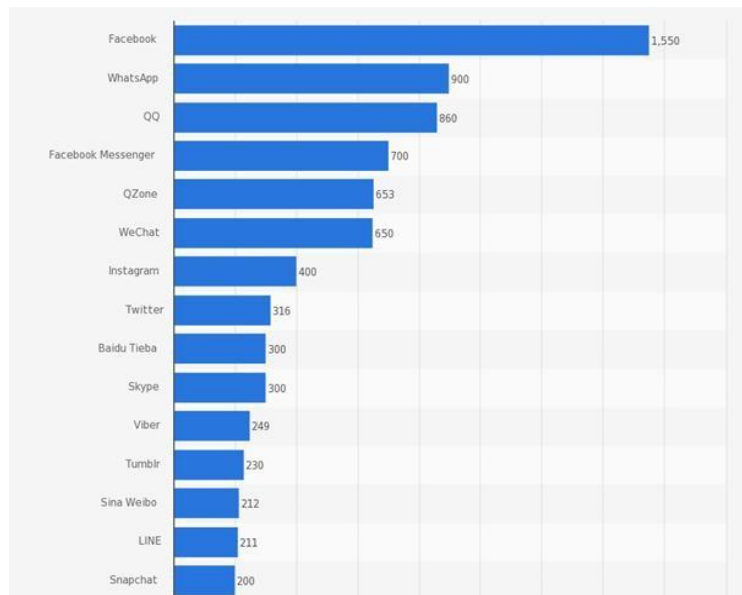

Fig. 3 Picture showing usage of chatbots

Recently mobile conservation is becoming the most popular thing in conversation. The things of text space channels are exploding massive increases. Young generation preferred to use the social media platform to interact with each other. The specialty of such conversations is they are really simple and time-saving mode of communication. So chatbots can really be successful if it follows all the simpleness of an instant messaging computer program. Chatbots are usually text driven with image and brought together as simple gadgets which make to start interacting with bots just like a messaging app we are using-it's simple and exactly says why we like the things so much. Content is important and there will be no distracting the users with fancy and unnecessary features. These things are the core of chatbots that's why they are doomed to success. The following figure Fig 3 shoes the most commonly use chatbots. What's more we are likely to credit human features to nonliving things; means giving non-living thing qualities to a living thing, of complex ideas is most natural function of a mind. So we can interact with chat bots, we are tricked into thinking that we are communicate with a person. There is one difference between a real person and a chat bots. The chat bots is a selfless and dedicated to you, it is always there for you and it has

time for you. And that's even more amazing about this technology. Dedicated system which can solve all the questions related to medicines Currently medicine description places are sad and wired in interaction and detailing of medicine. As the number of kind of sickness is very high so the numbers of medicines are also very high. There are different companies that are manufacturing them. The manufactures have their own signature in the medicine. Each of them is different from one another. So there is no way to check the composition or use of each medicine. The system can describe the medicine given by the name and the manufacturing company it will give the chemical composition, dosage for each age group, prescribed users and side effects etc. The user can ask almost any question related to the medicine. Then the user can check for doctor opinion and be sure of the treatment suggested. Designed in such a way that it should work in supporting surface devices The service of the system should be available to as much as possible to the people. It must be able to work across many supporting platform, both in personal computers as well as mobile which is a basic technologies that run like a computer. The system should be designed in such a way that it is capable of working in many supporting platforms such as iOS, windows, and android as shown in Fig 4. As the support increases so thus we can help many amounts of people suffering from health issues.
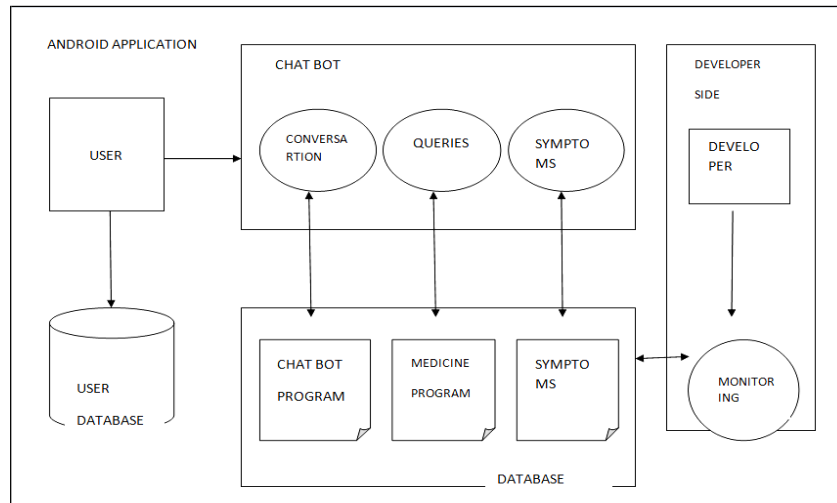

Fig. 4 Proposed System

Effective sign of sickness and disease prediction Each disease has its own distinguishing style. They start as simple problems and grow into something dangerous and forbidding. The sickness starts as sign of sickness like headache or back pain which seem usual. But actually they will be beginning of something like dangerous disease like cancer etc… So each disease has specific pattern of growing. The most of sickness can be easily identified by careful study of the sign of sickness. The sign of sickness can be anything like headache itching etc… So study the sign of sickness carefully and give the possible health problem can be identified properly. If a person's is carefully studied occasionally it is possible to predict any problem even before they start to cause any damage to the body. Age based dosage Everyone cannot intake same amount of medicine with similar dosage, basically the intake dosage is separated and labeled based on age and weight of the person who intake the medicine. So the chatbot is designed in way that it gives medicines description including the dosage of medicine based on the age and weight of the user.

Medicinal format for the Chat bot is given below:

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"Medicine ;"{

"Med 001":{

"Name" : "Aspirin"

"Dosage": "Typical range from 50mg to 6000mg daily" . "Types" : "Aspirin 81 mg EC-TC, yellow, round;

Aspirin 975 mg EC-TIM, white, oblong; Aspirin EC 325 mg-GER, orange, round";

"Checom": "C9H8O4; IUPAC Id:2-Acetoxy benzoic acid; Molar Mass:180.175

g/mole"

"Side effects": upset stomach and heart burn may happen the major side effects

including difficult in hearing, kidney problem, vomiting or nausea, unexplained fatigue, dark urine, yellowing eyes or skin. The very major sensitive reaction to this drug is not occur very offend.

"Uses: 1. Aspirin is a medicine which is used to reduce mild to not extreme pain from conditions such as muscle hurts, toothache, common cold and headaches.

2.   Medicine is known as salicylate and a non-steroidal anti-swelling drug.

Painful joints swelling. Body to reduce pain.

}

}

3.   It may also used to reduce swelling and pain in condition such as

4.   It works by resisting a certain natural elements or substance in our

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Prediction methods of chatbots Branded product information chat bots permit individuals to obtain valuable materials faster, easier and from any of the devices. It could clarify and MOA (mechanism of action) and plays the role of doctor in an incompatible elaboration guides, or provides instant access and by driving users to engage with a branded chatbots which can identify a many of eligible leads. Getting information about diseases can be risky, especially when the disease is intricate and the patient is inexperienced. With unbranded diseases information chatbots the individuals can collect all of the needed information from one place, in a friendly and well known environment. We imagine chatbots that could act like coach with options about what could or should be done about a situation and help for patient. Here we created a chatbots within which a course of the conversation with the sleep coach chatbots, users to launch how much sleep they need in a night, when they would like to turn in , and what optional reminders they been set. Chatbots send assistive reminders as messages to assure the individual is ready for sleep time. Can easily be integrated and upgraded The system should be combined different things together so they worked as one unit. That is, it must be built of multiple modules. Each module is capable of performing a specific job. The modules must be able to be assisted and upgraded independently. The system offers many services. Most of them are very complex. So as time passes each module can be much improved. So the system must design in such a way that each module must be upgraded independently. The system should be able to promote the executed by the module. That's the reason for the system can be improved easily. As the system improves, the abilities of the system also increase. It will be able to identify the sickness, and also can describe more medicines. Once such proposed abilities of the system is describing the health status of human by analyzing pulse or an ECG. So it can give approximately timed at update on our health. Gives us statement about possible future events on sicknesses even before they start to grow as shown in the fig 5.

Fig. 5 Chatbot user interface

3. Conclusion

The implementation of personalized medical helper heavily depends on AI sets off computer instruction as well as the training data as discussed in the paper. However it is still in the early stage and levels and faces some challenges, some of which have direct link to artificial intelligence were discussed.. However personalized chat bots but not only faces challenges it does cause some challenges as the quality of being very close to the truth of result and practice to the extent that some futurist think and mission could replace most of the doctor today. Finally a successful execution of customized medicine would save many lives and prefect medical line of work.

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