

# SYMPTOM'S BASED DISEASES PREDICTION BY USING IBM WATSON COVERSAATION SERVICE

**Abstract**—CareAdvisor is an Android application and using Conversation, Speech-to-Text Services on IBM Bluemix (an open standard, cloud platform for building, running, and managing apps and services). CareAdvisor can programmatically learn about individual patients and customize their care. This allows CareAdvisor to turn relevant medical information into individual suggestion in real time all from smartphone. Using IBM Watson, the system recognizes the disease based on the symptoms provided by the. In this application, the detected disease is further linked to Home Remedies and the nearby clinics are listed.

Key words: IBM Watson, Symptoms.

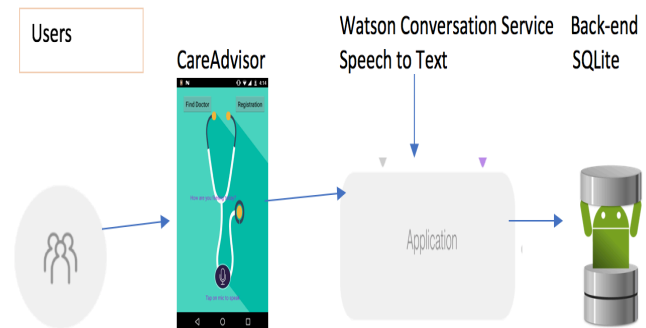
## I. PROBLEM INTRODUCTION

India faces the challenge of a range of viral diseases. Nearly 70 percent of the country's population lives in rural areas. Between 2006 and 2012 India reported an annual average of 20,474 dengue cases. annual average of 5,778,406 clinically diagnosed dengue cases between 2006 and 2012, or 282 times the reported number per year. The total direct annual medical cost was US\$548 million. There is lack of knowledge and awareness of health care among the rural people and doctor's availability is less.

## II. SOLUTION DOMAIN

The Care Advisor application targets disease which are spreading fast in the rural part of India. It also caters to those needy people who can't afford accessing doctors easily. The application provides informative natural remedies as well to book an appointment with a doctor available nearby their location. With minimal navigation and hands free technology provided through the application the user only needs to tap in the mic and go through a series of questionnaire as if he has visited a practical doctor and get the natural remedy. User will be suggested to visit a doctor soon by using the application's feature of "find a doctor" and "book an appointment".

## III. ARCHITECTURAL MODEL



## IV. MODULE DESCRIPTION

Care Advisor interact with users and communicate with the IBM Watson Conversation service.

Care Advisor serve two main functions:

### A. Disease prediction using IBM Watson.

Care Advisor ask users a series of questions about their symptoms or require users to input details about their symptoms themselves. Once the disease is predicted users are suggested with home remedies.

### B. Find nearby Doctor and book an appointment.

Doctor register and login to the application. Doctors records are maintained in the database. When user click on Find nearby doctor, application ask user to input his location. Based on user's location, nearby doctors are suggested to the user.

## V. WATSON CONVERSATION SERVICE

Users interact with application through the user interface android app CareAdvisor. The application sends the user input to the Conversation service. The application connects to a workspace, which is a container for dialog flow and training data. The service interprets the user input, directs the flow of the conversation and gathers information that it needs. Additional Android speech to text service is used to analyze user input. The application can interact with back-end systems based on the user's

query on find doctors. It also interacts with Watson Conversation API service to detect his health problem based on series of questionnaire.

#### *A. Defining Intents*

An *intent* is a purpose expressed in a user's input, such as answering a question. By recognizing the intent expressed in a user's input, the Conversation service can choose the correct dialog flow for responding to it.

#### *B. Defining entities*

An *entity* represents a class of object or a data type that is relevant to a user's purpose. By recognizing the entities that are mentioned in the user's input, the Conversation service can choose the specific actions to take to fulfill an intent.

#### *C. Building a dialog*

The dialog component of the Conversation service uses the intents and entities that are identified in the user's input, plus context from the application, to interact with the user and ultimately provide a useful response.

## VI. CONCLUSION

There is a shortage of health professionals in rural area. Viral diseases are spreading everywhere. People are dying. The CareAdvisor application enables patient to know their disease from symptoms and provide natural remedies.

## References

1. **Overview of the IBM Watson Conversation service**  
<https://www.ibm.com/watson/developercloud/doc/conversation/index.html>