Ilkogretim Online - Elementary Education Online, 2020; Vol 19 (Issue 3): pp. 4667-4673
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2020.03.735620

Wellness Management System Using Machine Learning

[1]Ms.M.Subashini , [2]Ms.Mageshwari D , [3]Ms.Karthika V , [4]Ms.Shalini P K

[1]Professor &HOD, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai
[2]Student, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai [3]Student, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram, Chennai
[4]Student, Sri Sai Ram Institute of Technology, Sai Leo Nagar, West Tambaram ,Chennai

Abstract— Artificial intelligence and machine learning are becoming an ordinary part of human lives in the 21st century. Gartner's analysts named AI as a top strategic technology trend. According to Research And Markets' report on COVID-19 Growth and Change, the global artificial intelligence market is expected to grow more than twice in just a couple of years. The aging population not only causes long hospital waiting times and expensive hospital stays. Managing the cost and quality of treatment and caring for seniors are becoming key pressing issues in both developed and developing countries. In our work we provide a facility to fix an appointment through mobile and main purpose of this work is to reduce the waiting time of the patient. This system provides a facility to view emergency first aid(audio and text) in mobile, until doctor arrives first aid treatment was given to the patient according to those first aid details. If doctor cannot reach the patient on time this system provides a video conversation facility between the patient and doctor which can be recorded. And finally this system provides a immediate recovery of patient by tracking his/her location using GPS.

Keywords— AI, Machine learning, long hospital stays and expensive , reduce the waiting time, tracks the location and call recording ,emergency first aid details.

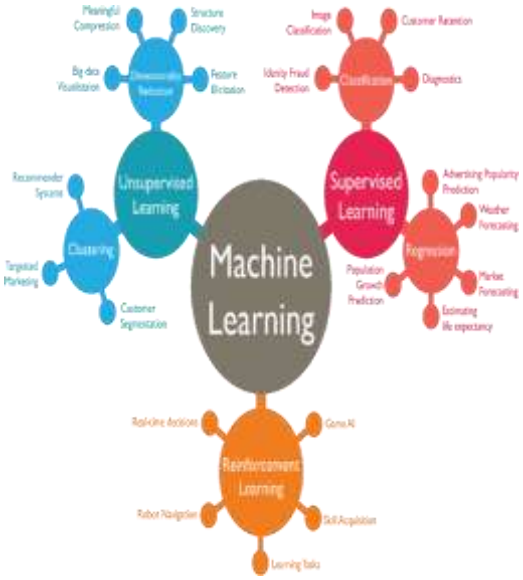
I. INTRODUCTION

Machine learning in health informatics can streamline recordkeeping, including electronic health records (EHRs). Gaps in healthcare information can result in machine learning algorithms making inaccurate predictions, which can negatively impact decision-making in clinical settings. As technology starts growing we need to update ourselves to current trends and our upcoming generations looking forward for necessary services in one touch. In the early 90s, when personal computers and the Internet became more accessible, hospitals actively began to implement electronic medical record software. According to the Centers for Disease Control and Prevention, 85% of office-based physicians use an EMR/EHR system. Embracing technology to keep health records made medical information more accessible. Still, there's a problem with how to collect data effectively. Machine learning canaddress this problem by offering tools for fast data processing. Such technologies as natural language processing and optical character recognition facilitate data collection and accelerate

administrative workflow.

As a carrier of emergency alarm and healthcare management system, there are some advantages for cell phone. First, the cell phone is convenient to carry. Second, open operating systems on cell phones ,such as iOS, Android and Symbian have many applications and easy to extend by developing application. Third, by the cell phone, user can make a phone call to their friends and family, and with the help of GPS chip, their location can be acquired. Healthcare management system provides health related medical services through smart phone which helps all generation people. This system provides emergency first aid details, by using those details we can give first aid for the patients until doctor arrives to the place. This helps in giving a supporting treatment after the doctor's arrival. And also providing a patient tracking facility which helps to tracks the patient's location incase of danger. An alert is send through this service to emergency numbers stored in this system. By using A-GPS algorithm we can track the patient's current location for immediate recovery.

Fig. 1 System Architecture



I. DESCRIPTION

A. EMERGENCY FIRST AID:

EF provides first aid details incase of any emergency. The patient's can view the first aid details in emergency situation such as details for Flu, Stomach Pain, fir eaccidents, etc. Generally people don't know what kind of first aid should be given during doctor's absence. In such case this system is very much helpful. The user can view the details in one touch, and also using Google translator we can view the same details in other language. Using the READ OUT mode the people can hear those emergency details through voice process. The details are given in both audio and text format so that this system can be used by physically challenged people too. By using Statstical machine

translation algorithm a natural language is converted to other natural language.

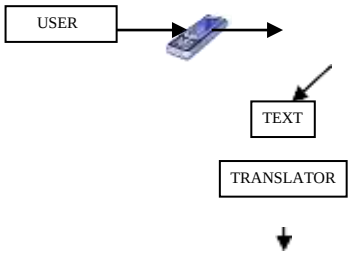


Fig. 2 EF Data flow diagram

B. LOCATION TRACKING:

This location tracking facility is very much helpful to track the location of the patient in case of any emergency or danger. If the patient suddenly gets any health problem just by pressing a button an alert message will be sent to one of his contact number and to the doctor's number who is dealing the patient. The alert message consist of current location of the patient. GPS gets activated and that will track the patient's location. Untill GPS gets deactivate the alert message will be sent for the particular interval of time. This system is very much useful to track the user when he/she is in any danger. When pressing the button ,latitude and longitude was calculated and within seconds the location address was sent to the particular contacts. Emergency numbers are embedded in the LT system.

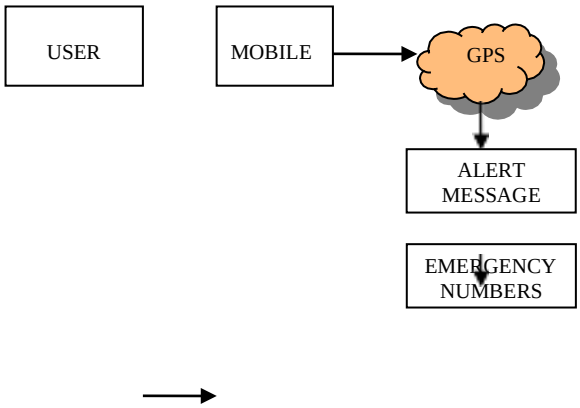


Fig. 3 LT Data flow diagram

C. APPOINTMENT FIXING:

The main purpose of this service is to reduce the waiting time of the patients which one of the issue faced in hospitals. The user can fix an appointment through mobile where the time is allotted according to the purpose of the meeting. A token number is generated in user's mobile which is also stored in hospital server. At particular interval of time next appointment is fixed for next user. This

may avoid the waiting time and gives the doctor to analyse the patient for the better treatment .And the system has provided the facility to the doctor to store the datas regarding treatment ofpatients.

D. VIDEOCALLRECORDING:

Video call conversation is a popular facility used in smartphones. This system records the video conversation between the doctor and the patient and stores that in cloud. In the absence of doctor or patient this video call facility is used. This service is used when the patient needs an immediate treatment. This cloud storage video can be shared with many users available in the same network. All the videos which are all recorded are stored in cloud which can be retrieved by the doctors at anytime for the further treatment. It provides a live treatment in case of doctor's absence.

II. TECHINIQUESSPECIFICATION

Statistical machine translation (SMT) provides translation of any natural language into a machine learning one. The main goal of this technique is to translate from one language to other. By examining many samples of human- produced translation, SMT algorithms automatically learn how to translate. It translates the written form of the language but can be used in combination with speech recognition and text-to- speech synthesis to translate spoken language. The fundamental aim of statistical machine translation is to take a fragment in one written language and translate it into another written language.

$$e\hat{} = \arg e \max P(e|f)$$

The kind of sentences that are likely in the language E. This is known as the language model — P(e).

The way sentences in E get converted to sentences in F. This is called the translation model –P(f|e)

Assisted GPS (**A-GPS)** is the technique used to trace the current location of the patient. It's important to note that AGPS will only work if the device has a GPRS (data) connection, normally using a 3G connection. The first time GPS signal attempts to track it has to download three sets of data (GPS satellite signals, almanac data, and ephemeris data) to calculate its position. Assisted GPS can help avoid this, solving the data connection issue by linking to a web-based internet server (known as an assistance server) that already holds the current satellite information. It can take anywhere from 30 seconds to a couple of minutes to acquire a signal. In the A-GPS architecture, in addition to a digitized GPS signal, several pieces of assistance data are made available to theGPS Algorithm .These are the main requirements of the Assisted GPS which includes:

1. **Time stamp**. This can be supplied through a cellular network and represents an estimate of the time at which the GPS signal capture was initiated. In a CDMA network, time stamps are typically accurate to within 100 ls or better. In a GSM network, time stamps can be off by several seconds.

2. **Approximate location**. Typically taken to be the location of the base station from which the mobile device receives assistance data, the approximate location serves as a coarse estimate of the receiver's location. In urban areas, the closest base station is typically within a few kilometers of the receiver. In rural areas, the closest base station can be tens of kilometers from the receiver.

3. **Ephemeris information**. This is easily obtained through a network, and can be used to compute satellite locations, velocity, and acceleration.

4. **Satellite clock corrections**. Satellite clocks drift over time. At any given time, clock error estimates can be obtained through the network. The calculation is based on satellite system.

5. **Differential corrections**. As with conventional differential GPS systems, this data is obtained from a reference receiver network and enhances system accuracy.

6. **Navigation data**. Navigation data is required for coherent processing of long durations of signal. With the right algorithms, transmission of navigation data from the base station to the mobile device can greatly enhance sensitivity. This data is obtained through the satellite information.

d =min || start Position, pi ||
d = || curr Position, p index, ||
next Point Index = next Point Index +direction.

where || . || denotes GPS distance.

Fig. 4 Assisted GPS workflow

V. CONCLUSION

This system present an android-based Emergency Alarm and Healthcare Management System, which is practically deployed on android- based Phones. The system can give emergency help at anywhere and anytime, can remind users for medicine and can provide the function of seeing a doctor to the user. This does not only undoubtedly provide the senior people and the chronic patients the more

convenience and safety, but also provide most of people. Service-oriented paradigm can be successfully applied to medical systems, increasing their flexibility and dynamism, allowing the creating of applications of added value, such as the usage of smartphones. This is a very useful in the field of medical where it applies to all categories of people. It is projected that the percentage of elderly people making up the total population will more than double over the next 50 years [16], resulting in many more individuals requiring special hospital treatment and long-term medical care. So our system will be more usefull and it is user friendly.

REFERENCES

1. Akanksha Saini,A J Meitei ,Jiten kumar Singh,"Machine Learning in Healthcare: A Review "Proceedings of the International Conference on Innovative Computing & Communication (ICICC) 2021.

2. Shalinee Pareek,Ajay Kumar Suwalka Himanshu Kothari "A Study on Machine Learning in area of Healthcare", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.8, Issue 12, page no.b195-b199,December- 2021, Available :http://www.jetir.org/papers/JETIR2112126.pdf

3. Alvin Raj komar, Jeffrey Dean,and Isaac Kohane, M.D., "Machine Learning in Medicine" April 4, 2019 N Engl J Med 2019; 380:1347-1358
DOI: 10.1056/NEJMra1814259.

4. Akash C. Jamgade, Prof. S.D.Zade "Disease Prediction Using Machine Learning", International Research Journal of Engineering and Technology (IRJET) Volume: 06 Issue: 05 | May2019.
5. Meherwar Fatima, Maruf Pasha ,"Survey of Machine Learning Algorithms for Disease Diagnostic", Journal of Intelligent Learning Systems and Applications, 2017, 9, 1-16 http://www.scirp.org/journal/jilsaISSN Online: 2150-8410 ISSN Print: 2150-8402

6. Pravin Shinde, Prof. Sanjay Jadhav ,"Health Analysis System Using Machine Learning" (IJCSIT) International Journal of Computer Science and Information Technologies,Vol. 5 (3) , 2014,3928-3933.