Disease Prediction Using Lab Reports

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Abstract: **Admittance to emergency clinic information is usually a difficult, exorbitant and tedious cycle requiring broad cooperation with network overseers. This prompt potential deferrals in obtaining bits of knowledge from information, like conclusion or other clinical results. Medical care managers, clinical professionals, specialists and patients could benefit from a framework that uses a medical system which could separate significant data from medical services information in constant. In this project, we present an inquiry addressing framework which works using machine learning that permits wellbeing experts to interface with a enormous scope information base by posing inquiries in normal language. This framework is based upon the NLP model, which make an interpretation of a client's solicitation into a SQL question, which is then passed to the information server to recover pertinent information. We additionally propose a profound bilinear comparability model to work on the created SQL inquiries by better matching terms in the client's question with the information base mapping and substance.**

Keywords: **NLP model, SQL question, SQL inquiries, Machine Learning, Medical system.**

INTRODUCTION

An automatized medical system is a system with human interaction using natural language diagnosis to provide medical aid. The vast amount of information that is available on the internet allows system s to provide accurate and systematic statistics based on the user's demand and requisite. System s are used in domains like Customer Support and Services, Virtual Assistance, Online Trainers, and Online Reservations and also for general conversations. In previous days it is difficult to have access to hospital and doctors personally on regular basis. It is time-consuming and costly to approach hospitals for normal consultancy. There is need for localized people to connect to the medical practitioners at ease, which is possible by using machine learning approach.

The purpose of our project is to save the time of our users in scheduling appointments for primary needs. Our system will help the user to get aid in primary symptoms and would give them all details like causes, preventions and disease name. We would advise to visit a doctor in emergency. The users that we are targeting would be localities of Nasik and they can use any language English, Hindi or Marathi.

We have identified the medical needs of user while building the project like they should be able to speak up in native language and get basic information regarding their symptoms. Here we are also giving them information about doctor specialist and his location.

PURPOSE

There are few Medical systems that already exist, but they do not provide users with medication to any illness but connect them with a Medical QA Forum and show them similar questions to their symptoms that doctors may have previously answered. The system was compared with Health Tap which is a popular Facebook Messenger system. Our motive is to show that the proposed medical system could be a better alternative to many already existing system s in the domain of medicine.

EXISTING SYSTEM

Better organization of patient pathways, medication management, and help in emergency situations or with first aid, offering a solution for simpler medical issues: these are all possible situations for system s to step in and ease the burden on medical professionals. A medical system is used by healthcare providers to provide instant support to existing and potential patients. It acts as a customer support agent that answers questions 24/7. System s are used in domains like Customer Support and Services, Virtual Assistance, Online Trainers, and Online Reservations and also for general conversations.

Access to hospital data is commonly a difficult, costly and time-consuming process requiring extensive interaction with network administrators. This leads to possible delays in obtaining insights from data, such as diagnosis or other clinical outcomes. Healthcare administrators, medical practitioners, researchers and patients could benefit from a system that could extract relevant information from healthcare data in real-time.

OBJECTIVE OF SYSTEM
1. Providing a feature where user will get the information regarding diseases
2. Avoid the Time-consuming task of feature extraction.
3. Effective way with 80-85 percentage accuracy.
4. To provide a cost-effective solution in market.

LITERATURE SURVEY
In this paper, we present a question answering system that allows health professionals to interact with a large-scale database by asking questions in natural language. This system is built upon the BERT and SQLOVA models, which translate a user's request into an SQL query, which is then passed to the data server to retrieve relevant information. We also propose a deep bilinear similarity model to improve the generated SQL queries by better matching terms in the user's query with the database schema and contents. This system was trained with only 75 real questions and 455 back-translated questions, and was evaluated over 75 additional real questions about a real health information database, achieving a retrieval accuracy of 78 percent.

This article analyzes the basic classification of machine learning, including supervised learning, unsupervised learning, and reinforcement learning. It combines analysis on common algorithms in machine learning, such as decision tree algorithm, random forest algorithm, artificial neural network algorithm, SVM algorithm, Boosting and Bagging algorithm, BP algorithm. Through the development of theoretical systems, further improvement of autonomous learning capabilities, the integration of multiple digital technologies, and the promotion of personalized custom services, the purpose is to improve people's awareness of machine learning and accelerate the speed of popularize

This system focuses on development of web application using django. Django is a modern Python web framework that redefined web development in the Python world. A fullstack approach, pragmatic design, and superb documentation are some of the reasons for its success. Django, an open source Python web framework that saves time and makes web development fun. Django follows the Model-View Controller (MVC) architectural pattern. Its goal is to ease the creation of complex, database-driven websites

The possibility of this research paper is to create attentiveness among upcoming scholars about recent advances in technology, specifically deep learning an area of machine learning which finds applications in big data analytics and artificial intelligence.

PROPOSED SYSTEM
The scope of the project medical system s are AI-powered conversational solutions that help patients, insurance companies, and healthcare providers easily connect with each other. These bots can also play a critical role in making relevant healthcare information accessible to the right stakeholders, at the right time. A medical system has the capacity to check existing coverage, help file claims and track the status of claims. Healthcare AI tools can also help doctors through the preauthorization process and billing inquiries. AI and healthcare are converging to enhance the patient and provider experiences.

The Framework is capable of allowing the developer to develop the learning application with ease and import it on the devices which contain web application. This application developed by the vendor will allow the user to use it with high power of interactivity and portability. The commercialization of the web application may take time. It incorporated best practice web research into a practical framework of web based design requirements.
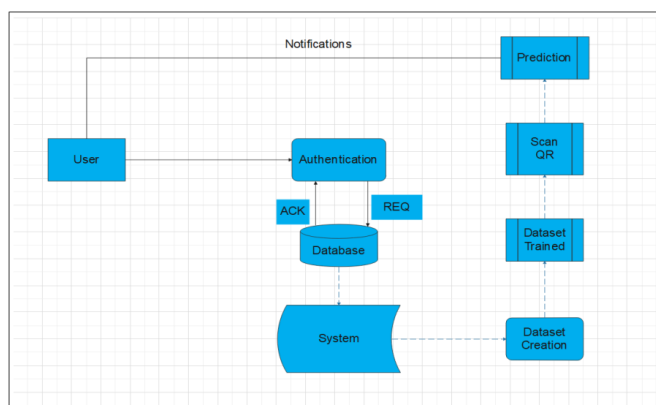
SYSTEM ARCHITECTURE

Fig -1: System Architecture Diagram

IMPLEMENTATION DETAILS (Modules)

1.   **Login and Authentication:** Basically AES algorithm is used to encrypt the data and for validation. Here the Authentication process is done. 128 bit encryption process will be followed. To review the overall structure of AES and to focus particularly on the four steps used in each round of AES:

a)   byte substitution
b)   shift rows
c)   mix columns
d)   add round key

2.   **Prediction module:** Here we will Predict the user has the diabetics or not.

3.   **Result display:** Here J48 algorithm will be used. Here the output will be process and show notification to user. Python language will be use to build this model.

ADVANTAGES

1.   Providing a feature where user will get the information regarding diseases
2.   Avoid the Time-consuming task of feature extraction.
3.   Effective way with 80-85 percentage accuracy.
4.   To provide a cost-effective solution in market.

APPLICATION

- Hospitals
- Clinics
- Diagnostics Center

ALGORITHM/TECHNOLOGY

- **SVM**

Support Vector Machine (SVM) is a supervised machine learning algorithm used for both classification and regression. Though we say regression problems as well its best suited for classification. The objective of SVM algorithm is to find a hyperplane in an N-dimensional space that distinctly classifies the data points.

SYSTEM REQUIREMENTS

- **Software Used:**

1.   VS Code
2.   Python 4.4 or above
3.   Dataset

- **Hardware Used:**

1.   Processor dual core or high
2.   Ram 4 GB or high
3.   Hard Disk 250GB or high

CONCLUSION

Our Medical system will incredibly affect the existence of its clients. It would likewise give them the opportunity to counsel a specialist every minute of every day and furthermore can get a genuine specialist's recommendation if necessary. This can be a most well-known instrument for individuals with occupied timetable as they will not need to hamper their timetable to counsel a specialist for minor well-being questions. This would likewise be a device with high utility among old and actually handicapped individuals as this can assist them with getting answers for all their well-being related issue readily available.

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