

## Web Based Machine Learning Approach For Identifying Diseases-Treatment

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**Abstract - This project assists user to identify disease by entering symptoms from their home or in workplace. In current system people does not have complete knowledge about the signs of disease. In current system, a patient has to come to the hospital and has to take doctor's appointment. But using this project, a patient can logon to the web site and get the required details. Hence data retrieval can also be very easy and faster. If any person needs more information about particular disease, they have to visit doctor or some healthcare institute. But in some cases, user cannot get proper information. This project helps users to get rid of disease by providing the prevention details. In this doctor can enter the disease details along with its signs. Doctors also add treatment to heal the disease and prevention details. Users of this portal should register before login. User can search disease by entering symptoms or get symptoms by selecting disease. If user suffers from any disease can get the treatment details and also prevention for that disease. Admin of this website has entire control. Admin can view the users and doctor's details. Admin grant permission for doctors to login. User may have queries about treatment or disease. This web portal helps user to communicate with doctors to clarify doubts from anywhere.**

**Index Terms – Health Information, Doctors, Disease, Machine Learning.**

### I. INTRODUCTION

People care deeply about their health and want to be, now more than ever, in charge of their health and healthcare. Life is more hectic than has ever been, the

medicine that is practiced today is an Evidence-Based Medicine (hereafter, EBM) in which medical expertise is not only based on years of practice but on the latest discoveries as well. Tools that can help us manage and better keep track of our health such as Google Health1 and Microsoft HealthVault2 are reasons and facts that make people more powerful when it comes to healthcare knowledge and management. The traditional healthcare system is also becoming one that embraces the Internet and the electronic world. Electronic Health Records (hereafter, EHR) are becoming the standard in the healthcare domain.

Researches and studies show that the potential benefits of having an EHR system are:

Health information recording and clinical data repositories - immediate access to patient diagnoses, allergies, and lab test results that enable better and time-efficient medical decisions; Medication management—rapid access to information regarding potential adverse drug reactions, immunizations, supplies, etc.; Decision support - the ability to capture and use quality medical data for decisions in the workflow of healthcare; and Obtain treatments that are tailored to specific health needs - rapid access to information that is focused on certain topics. In order to embrace the views that the EHR system has, we need better, faster, and more reliable access to information. In the medical domain, the richest and most used source of information is Medline,4 a database of extensive life science published articles.

All research discoveries come and enter the repository at high rate (Hunter and Cohen), making the process of

identifying and disseminating reliable information a very difficult task. The work that we present in this paper is focused on two tasks: automatically identifying sentences published in medical abstracts (Medline) as containing or not information about diseases and treatments, and automatically identifying semantic relations that exist between diseases and treatments, as expressed in these texts.

## II. SYSTEM STUDY

### EXISTING SYSTEM:

In existing system people does not have complete knowledge about the disease and its symptoms. Patients have to come to the hospital and have to take doctor's appointment. This may hard to patients to wait, to visit doctor. Patients cannot be health conscious because they don't get any awareness about diseases. They don't get details about prevention. So, there is a need to record health information in data repositories for immediate access to patients and to diagnoses diseases which enables better and time-efficient medical decisions.

### DRAWBACKS OF EXISTING SYSTEM:

1. This takes more time to get details about disease and treatment.
2. Difficult to identify disease
3. Patients' doubts cannot be clarified.

### THE PROPOSED SYSTEM:

The propose system approach is to show what Natural Language Processing (NLP) and Machine Learning (ML) techniques what demonstration of information and what classification algorithms are suitable to use for identifying and classifying relevant medical information in short texts. In this doctor has separate login. They can enter the disease details and the prevention for the diseases. Patients can login and enter the symptoms and get disease details and the details of treatment should be taken. Through this patient can get the information about disease and its prevention. If they have any doubt, they can post questions and the doctors of this website will answer the questions.

### ADVANTAGE OF THE PROPOSED SYSTEM

1. It creates awareness about disease
2. Patients can easily clarify their doubts
3. It consumes less time

## III. SYSTEM DEVELOPMENT

### DESCRIPTION OF MODULES:

This project has five main modules to demonstrate the entire process of identifying disease and treatment in short texts by using machine learning approach.

1. Endorsement
2. Article posting and updating.
3. User short texts.
4. Search result
5. Reports.

### Modules Description:

#### 1. Endorsement

This is the basic level of module which will give the right to access facility about the machine learning process to user and provide the authorization to the doctors. It can be dividing as registration and login process.

#### User Registration:

User registration is not necessary, but when we consider about the patience we need registration, so in registration patient name address and other details will be added.

#### Doctor Registration:

Doctor registration is the major authorization for the further process of them, to upload data, view patience query they need authorization.

#### Admin:

This module is controller of the entire process. It Prevent unauthorized user's and doctors in this process.

#### 2. Article publishes:

This module is for paper posts about the diseases and the treatments for it. The doctors who are authorized by the controller only can post data details. Once the doctor post article, then that was in public visibility to help patient and users to know about their disease and treatments. Doctors can also update their article after the post; due to the new technology unveiled they can edit and update it.

#### 3. User Short text:

This module about users input data and its analysis. At first the user enters the disease name and search solution for that

disease. User can enter the disease name as short text. This text will be used to find relevant data in the database. Then user can enter the symptoms for identifying the disease.

#### 4. Search Result:

This module deals with the information extracted from the query given. If the user enters the disease name, then the symptoms of disease is extracted. User can provide the symptoms for identifying the disease. This also provides information about the disease along with its treatment and prevention should be taken.

#### 5. Reports:

This module explains about all process in details. The count of disease which has been frequently searched is also viewed. This module generates various reports. They are,

- The doctor details,
- Article details,
- Patient details,
- Treatment and diseases,
- Priority results

### IV. OUTPUT SCREENS



Fig: Home Page

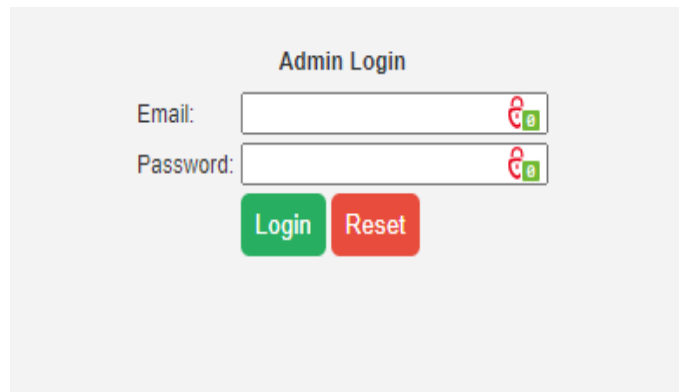


Fig: Admin Login

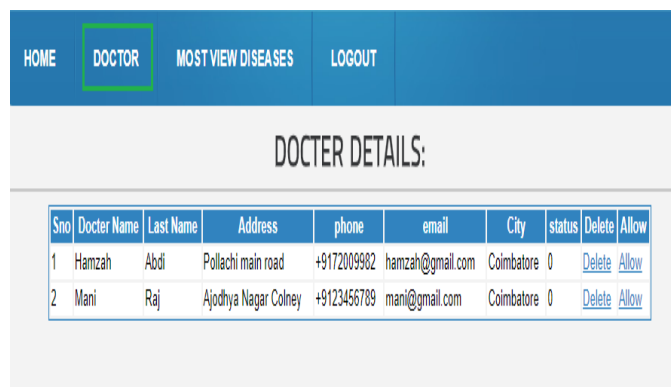


Fig: Admin - Doctor Details

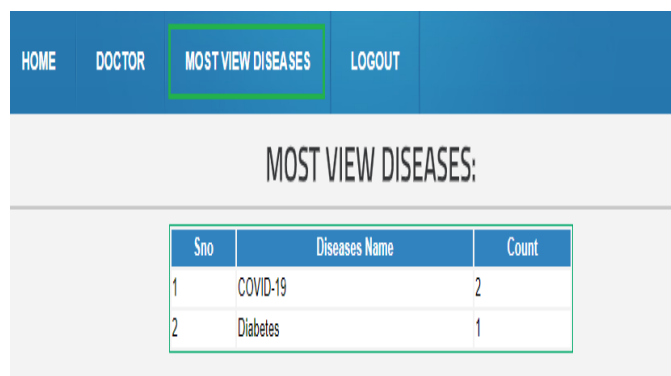


Fig: Admin - Most View Diseases

## Doctors

**Doctor Login**

Email:

Password:

[Create New Account](#)      [Forgot Password?](#)

**Fig: Doctor Login**

**ADD DISEASES**

Enter Diseases Name:

Symptoms:

Treatment:

prevent:

**Fig: Doctor – Add Diseases**

**Doctor Register**

Doctor Name:

Last Name:

Email:

Password:

Retype Password:

Address:

City:

state :

Country:

Mobile:

Phone:

**Fig: Doctor Register**

**DISEASES DETAILS:**

Sno	Diseases Name	Symptoms	Treatment	preventing	Delete	Update
1	Cardiovascular Diseases (CVD)	Shortness of breath, Chest pain, Chest discomfort, Pain in the upper abdomen, neck, back, throat, jaw Pain or numbness in your arms, and legs.	Medication, such as to reduce low density lipoprotein cholesterol, improve blood flow, or regulate heart rhythm.	Be physically active, Exercise regularly, Monitor your weight, Stop smoking, Control your blood pressure, Keep a check of Your Cholesterol,	<a href="#">Delete</a>	<a href="#">Update</a>
2	Stroke	Sudden weakness or numbness in the face, arm, or leg, Trouble seeing from one or both the eyes, Severe headache with no known, Sudden confusion, difficulty in speaking or understanding.	Clot-breaking drugs, Mechanical thrombectomy, Stents, Surgery, Medications.	Quit smoking, Control blood pressure, Maintain a healthy lifestyle, Exercise regularly.	<a href="#">Delete</a>	<a href="#">Update</a>
3	Respiratory Diseases	Nasal congestion, Runny nose, Sneezing, Fever, Cough, Weakness, Shortness of breath lasting for more than a week, Scratchy or sore throat.	Bronchodilators. These are the most frequently used inhaled medications, Corticosteroids, Mast Cell Stabilizers and Anti-IgE Antibodies, Leukotriene Receptor Antagonists.	Avoid going to polluted areas, Wear a surgical mask if required, Exercise regularly, Stay active.	<a href="#">Delete</a>	<a href="#">Update</a>
4	Diabetes	Extreme hunger, Unexplained weight loss, Fatigue, Increased thirst, Frequent urination, Irritability.	Type 1 diabetes involves insulin injections or the use of an insulin pump, frequent blood sugar checks, and carbohydrate counting, Type 2 diabetes primarily involves lifestyle changes, monitoring of your blood sugar, along with diabetes medications, insulin or both.	Avoiding high-sugar foods, Eating a diet high in fresh, nutritious foods, Engaging in at least 30 minutes of exercise per day, Using insulin.	<a href="#">Delete</a>	<a href="#">Update</a>
5	Malaria	Fever, Muscle pain, Nausea, Abdominal pain, Headache, Diarrhea, which can be seen within 7 days after you've been bitten by an insect.	Malaria is treated with prescription drugs to kill the parasite, treatment depend on which parasite is causing your symptoms, Antimalarial drugs include: Artemisinin drugs (artemether and artesunate), Atovaquone (Mefloquine), Chloroquine, Doxycycline (Doxi-1000), Monodox® (Oracea®), Mefloquine, Quinine.	You can prevent Malaria by following the steps given below: Stay in well-screened areas in the night, Use insect repellent, opt for full-sleeved clothes, Use bed net while sleeping to get rid of the mosquitoes.	<a href="#">Delete</a>	<a href="#">Update</a>

**Fig: Diseases Details**



**Fig: Doctor Home**

**PATIENTS QUERY'S**

Sno	Doc Name	User Name	question	Reply
1	Mani	AHMED	How can I manage my diabetes better? Thanks doctor.	<a href="#">Reply</a>

**Fig: Patients Query's**

## Users

### User Login

Email:

Password:

[Create New Account](#)      [Forgot Password?](#)

**Fig: User Login**

### User Register

First Name:

Last Name:

Email:

Password:

Retype Password:

Address:

City:

state :

Country:

Mobile:

Phone:

**Fig: User Registration**

HOME    **SEARCH BY DISEASES**    SEARCH BY SYMPTOMS    QUERIES    ANSWER'S    LOGOUT

Search Here

Enter Diseases Name Here:

**Fig: Search by Diseases**

HOME    SEARCH BY DISEASES    **SEARCH BY SYMPTOMS**    QUERIES    ANSWER'S    LOGOUT

Search Here

Enter Symptoms Name Here:

**Fig: Search by Symptoms**

HOME    SEARCH BY DISEASES    SEARCH BY SYMPTOMS    **QUERIES**    ANSWER'S    LOGOUT

Enter Your Query Here:

Your Name:

Doctor Name:

Message:

**Fig: User Queries**

HOME    SEARCH BY DISEASES    SEARCH BY SYMPTOMS    QUERIES    **ANSWER'S**    LOGOUT

DOCTOR DETAILS:

Doctor Name	User Name	Question	Answer
Mani	AHMED	How can I manage my diabetes better? Thanks doctor.	Avoiding high-sugar foods, Eating a diet high in fresh, nutritious foods, Engaging in at least 30 mi

**Fig: Doctor Answer**

## V. CONCLUSION

The conclusions of our study suggest that domain-specific knowledge improves the results. Probabilistic models are stable and reliable for tasks performed on short texts in the medical domain. The representation techniques influence the results of the ML algorithms, but more informative representations are the ones that consistently obtain the best results. The first task that we tackle in this paper is a task that has applications in information retrieval, information extraction, and text summarization. We identify potential improvements in results when more information is brought in the representation technique for the task of classifying short medical texts. We show that the simple BOW approach, well known to give reliable results on text classification tasks, can be significantly outperformed when adding more complex and structured information from various ontologies. The second task that we address can be viewed as a task that could benefit from solving the first task first. In this study, we have focused on three semantic relations between diseases and treatments. Our work shows that the best results are obtained when the classifier is not overwhelmed by sentences that are not related to the task. Also, to perform a triage of the sentences (task 1) for a relation classification task is an important step. In Setting 1, we included the sentences that did not contain any of the three relations in question and the results were lower than the one when we used models trained only on sentences containing the three relations of interest. These discoveries validate the fact that it is crucial to have the first step to weed out uninformative sentences, before looking deeper into classifying them. Similar findings and conclusions can be made for the representation and classification techniques for task 2.

## VI. SCOPE FOR FUTURE ENHANCEMENTS

The future enhancement is optimizing medical data and satisfies the user requirements. Every application has its own merits and demerits. The project has covered almost all the requirements. Further requirements and improvements can easily be done since the coding is mainly structured or modular in nature. Changing the existing modules or adding new modules can append improvements. Further enhancements can be made to the application, so that the future enhancement is we develop the application through website and useful manner than the present one.

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