Medicine Recommendation System

A Machine Learning Project

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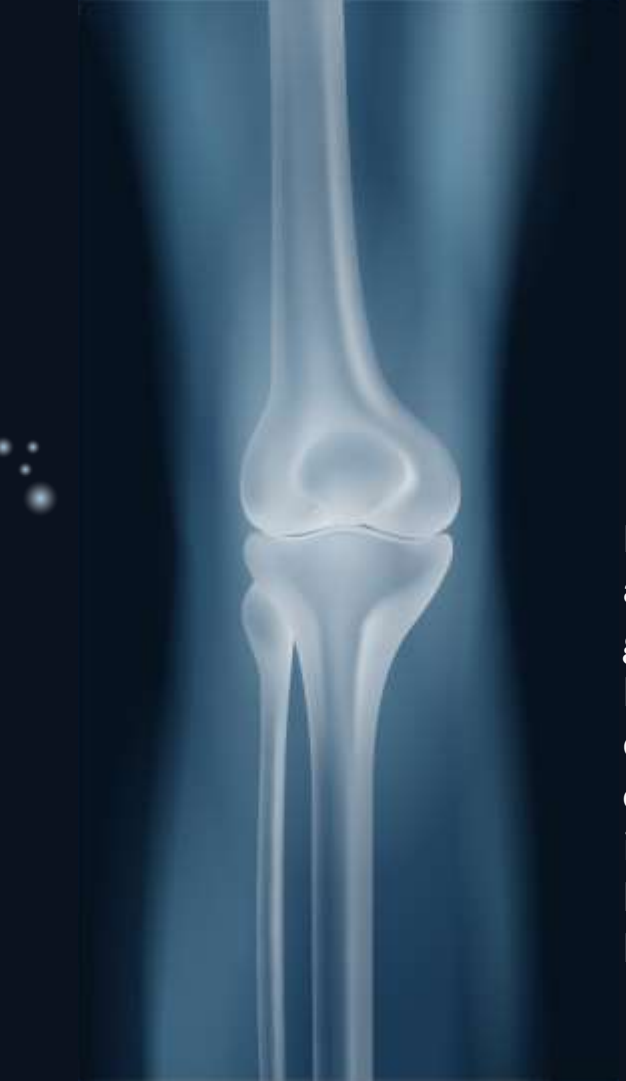
Overview

In the modern healthcare landscape, access to medical advice and treatment has become increasingly important. With the rise of digital technologies, there is a growing demand for remote healthcare solutions that can provide accurate recommendations without the need for physical hospital visits. This project aims to develop a recommendation system that suggests appropriate medicines based on the symptoms reported by individuals. The system leverages advanced machine learning algorithms and extensive medical databases to deliver precise and reliable recommendations.



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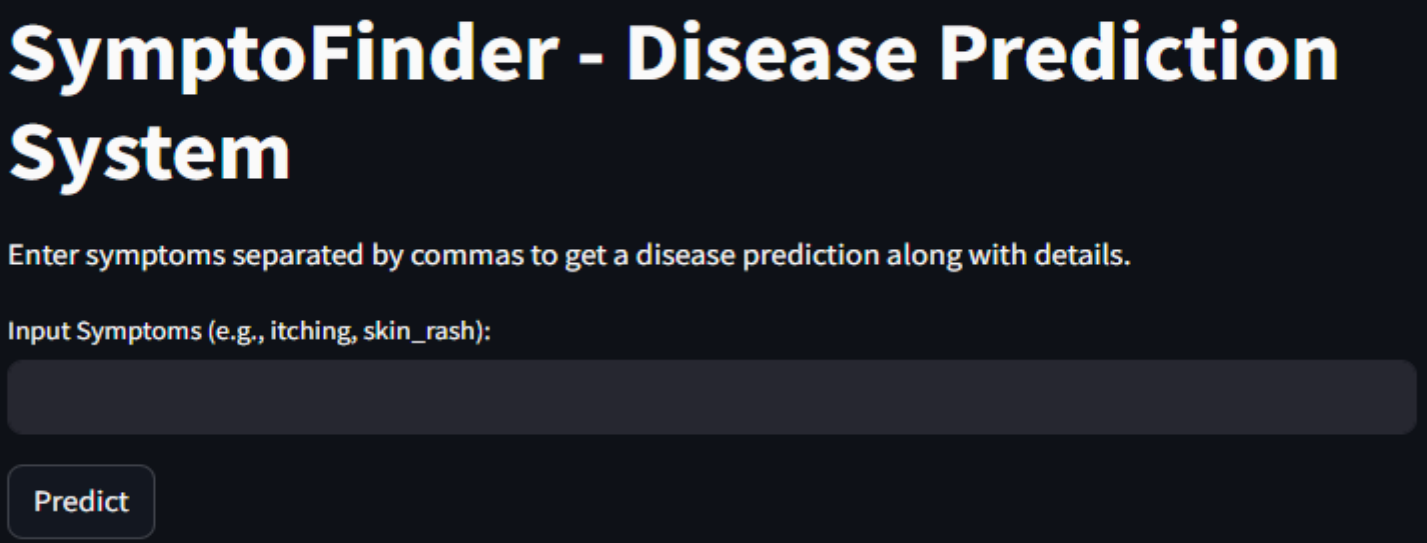
Problem Statement

Many individuals face challenges in accessing timely and accurate medical advice due to various factors such as geographical barriers, busy schedules, and overcrowded healthcare facilities. These challenges often lead to delayed diagnosis and treatment, potentially worsening health conditions. There is a need for a solution that can provide immediate, reliable, and personalized medical recommendations based on symptoms, thereby improving accessibility to healthcare and reducing the strain on medical facilities.

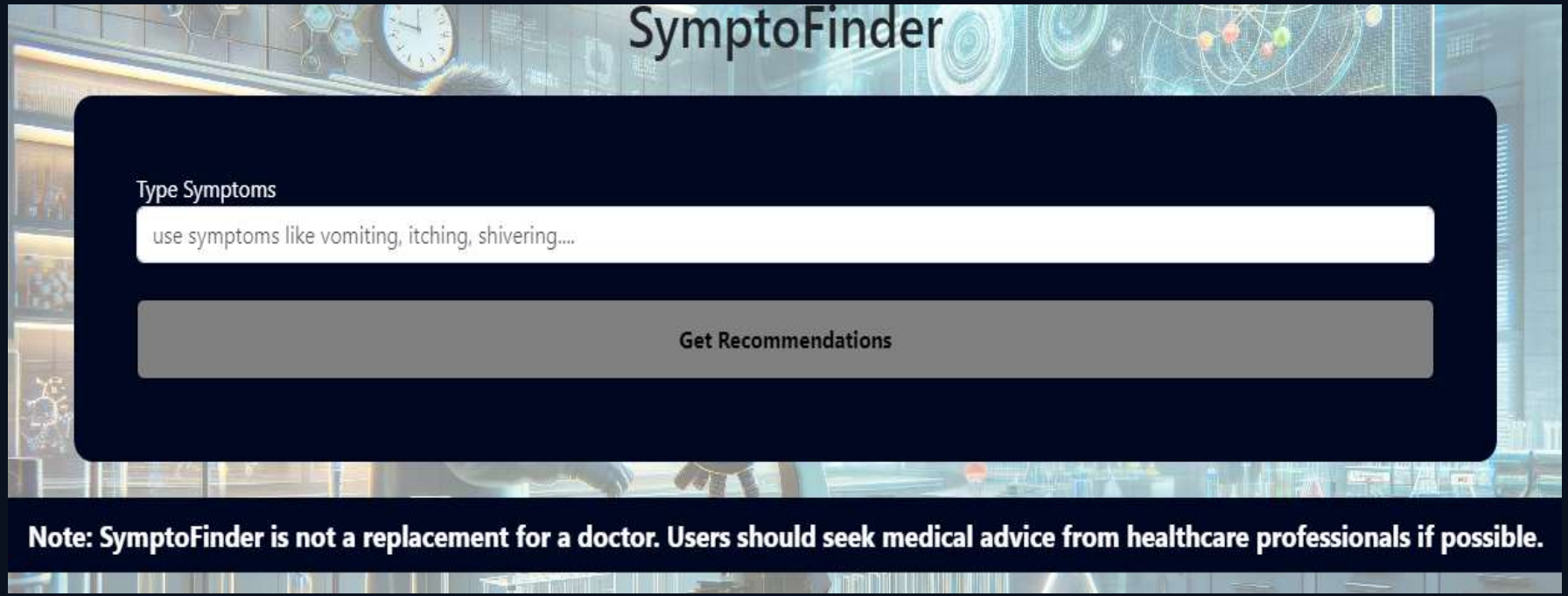
Objectives

- To gather a repository of detailed descriptions for a wide range of diseases, including causes, symptoms, and treatment options.
- To develop and train a machine learning model on extensive medical data to predict possible diseases based on the input symptoms.
- To give detailed descriptions of the predicted disease.
- To recommend appropriate medications based on the predicted disease.
- To integrate a user-friendly interface for individuals to input their symptoms.

User Interface



User Interface



Results

Input Symptoms (e.g., itching, skin_rash):

bladder_discomfort

Predict

Predicted Disease: Urinary tract infection

Description: Urinary tract infection is an infection in any part of the urinary system.

Precautions:

- drink plenty of water
- increase vitamin c intake
- drink cranberry juice
- take probiotics

Medications:

- ['Antibiotics', 'Urinary analgesics', 'Phenazopyridine', 'Antispasmodics', 'Probiotics']

Challenges

1. Deployment: Deploying this system proved to be the biggest challenge because web-hosting platforms like render and Docker require knowledge of their documentation in order to use them to deploy applications.
2. Exploratory Data Analysis: Due to the nature of the data, performing univariate and bivariate analysis was practically impossible since we had no numerical data and too many instances of the categorical data(symptoms) to draw any meaningful conclusions from such analysis.

Conclusion

This system is highly accurate in predicting diseases,providing descriptions and precautions to take,and recommending medications.However,not every existing symptom will return a result,which is something we look to improve on in the future.

Recommendations

It is vital to remember that this system does not replace a doctor.It is merely a guide to help understand one’s symptoms and take appropriate actions.It is designed to be used by individuals who cannot access a medical facility despite being in urgent need of medical care.Seeking advice from medical professionals is highly encouraged.

Future Plans

The main plan for this project moving forward is to expand the scope of the data to include more than 41 diseases and 12 symptoms. It was realized that some common symptoms eg. Fever could not be used for disease prediction by this system.

THANK YOU

Ask questions if you have any