

HEALTHCARE RECOMMENDER SYSTEM

Submitted by:-

Abhay Kumar Sahu
Pandey Abhishek Nath Roy
Rakesh Choudhary



Table of Content

- ❖ Introduction
- ❖ Problem Definition
- ❖ Data Collection
- ❖ Data Preprocessing
- ❖ Algorithm Selection
- ❖ Our Proposed System
- ❖ How It Works
- ❖ Benefits
- ❖ Challenges
- ❖ Conclusion

Introduction

Introduction

- A healthcare recommender system(hrs) is an intelligent system that provides personalized health recommendations to users based on their health data.
- It uses the concepts of machine learning and deep learning to analyze the data and give accurate recommendations.
- It is designed to improve the health of users by providing them customized suggestions for diet, exercise and life style.
- It can be personalized according to the preferences of the users.

Problem Definition

Problem Definition

- Due to the 21st century lifestyle, as the world is moving forward in technological enhancements, the people are not taking good care of their health and their life style has also worsen the things.
- One of the best examples will be the increase of chronic diseases like heart issues, diabetes and more.
- Lack of knowledge about these things have cornered us all to the uncertainty.
- Traditional methods are not that effective any more and hence, the need for personalized recommendations are must.

Data Collection

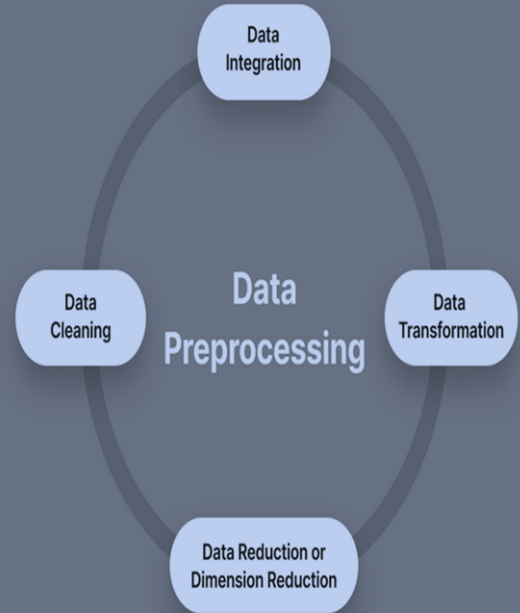
Data Collection

- Electronic Health Records (EHR) are the electronic versions of patient medical records that includes medical history, diagnosis, etc.
- Patient Generated Data includes from wearable devices, such as fitness trackers that includes vital signs, or blood sugar level.
- Vital Signs – Blood Pressure, Heart Rate, Respiratory Rate, etc.
- Data provided by healthcare providers such as physician notes or their prescription history.

Data Preprocessing

Data Preprocessing

- Data Cleaning – Removing data that are incomplete, inaccurate or inconsistent.
- Data Reduction – Reducing the number of variables or features to simplify the analysis process.



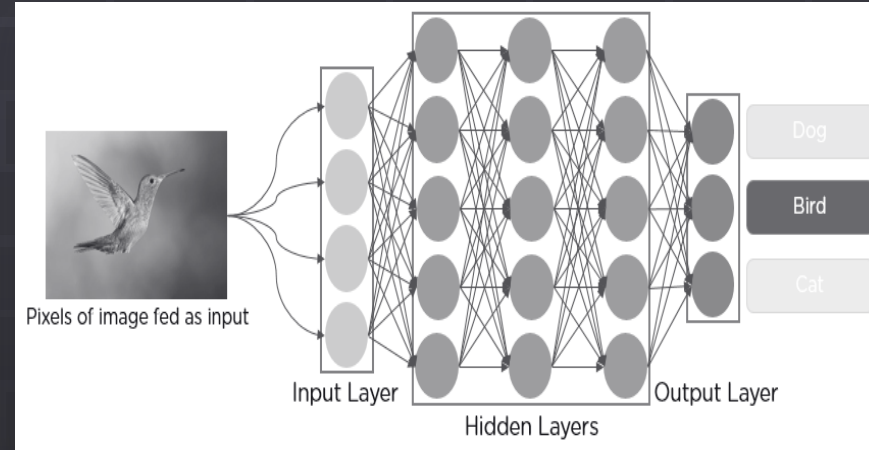
Data Preprocessing(Continued)

- Data Transformation – This step involves transforming the data to improve its distribution i.e., normally distributed and make it more suitable for analysis.
- Data Integration – Combining the data from different data sources like EHR, patient surveys, or personal medical records, etc.

Algorithm Selection

Algorithm Selection

- CNN (Convolutional Neural Network) – It is a type of deep learning algorithm.
- It is commonly used for image classification task.
- We can train the CNN on a dataset of skin images to detect and classify certain skin conditions like eczema, acne, etc.

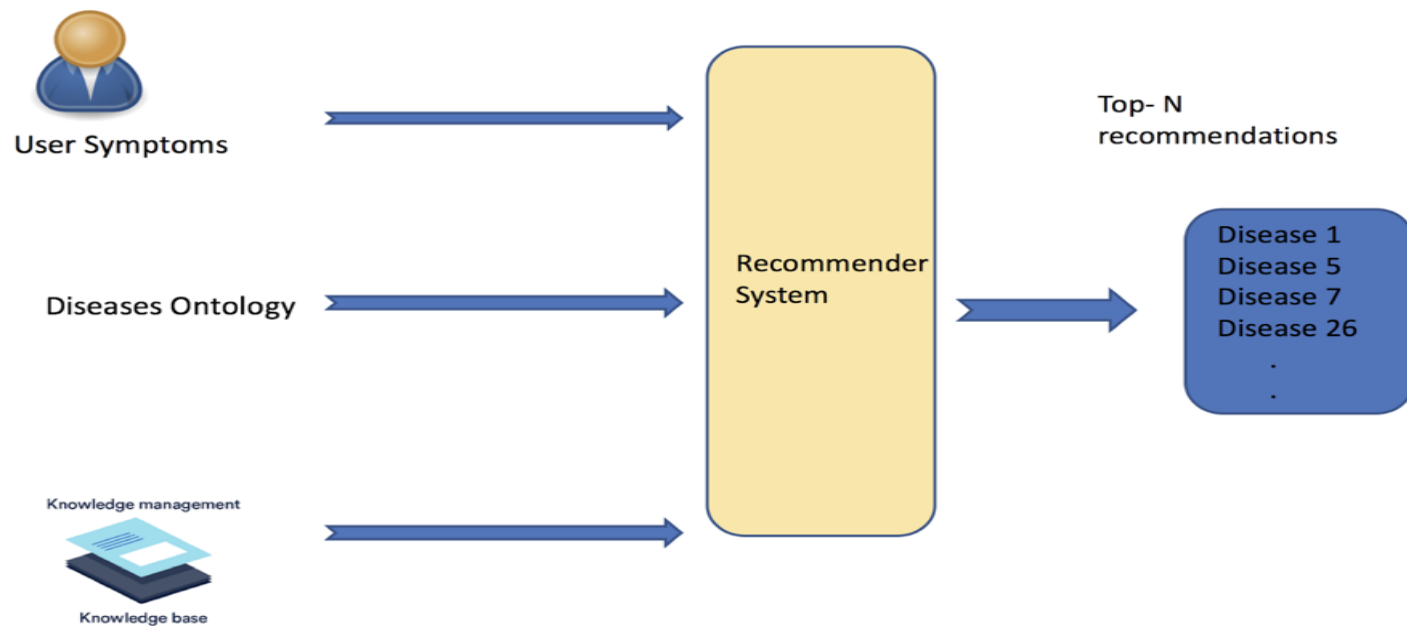


Algorithm Selection(Continued)

- Another algorithm that we would be using is RNNs.
- RNNs stands for Recurrent Neural Networks.
- They are well suited for sequential data, such as time series data or for natural language processing.
- Can be used for tasks such as predicting patient outcomes or analyzing clinical notes.
- Also, Support Vector Machines(SVMs) for predicting disease diagnosis based on patient's data.

Our Proposed System

Our Proposed System



Knowledge based recommendation

How It works

How It works

- It uses deep learning algorithms to analyze individual's health data.
- It includes EHR, patient generated data, data collected from different clinics, or from patient inspection and survey.
- It identify the patterns and correlations in the data.
- Our system, then uses this information to give personalized recommendations to users.
- It is constantly updating and learning based on new data.

Benefits

Benefits

- Cost effective in nature i.e., reduced healthcare cost.
- Time saving
- Increased efficiency in providing personalized recommendations.
- Empowers individuals to take control of their own health via our system.

Challenges

Challenges

- Data privacy concerns – must ensure privacy and security of the user's data as well as a good data quality must be maintained.
- Accuracy must be maintained as a slight error can lead to very disappointing situation.
- The need for a robust and more adaptable algorithms that gives more accurate recommendations.
- Can also handles the complexity of the individual's data.

Conclusion

Conclusion

- In conclusion, a healthcare recommender system has the potential to make a great impact in the healthcare sector by providing personalized recommendations to individuals.
- It can improve health outcomes, increase efficiency, and reduce healthcare costs.
- However, there are several challenges that must be taken care of.
- Right now, our goal is just to make a change.

THANK YOU