Drug Recommendation System

YUGANSH JAIN(184506)
PEEYUSH THAKUR(184510)
ROHIT BHATIA(184518)
JAMI TEJESH REDDY (184528)

Introduction

- The remarkable technological advancements in the health care industry have improved recently for the betterment of patients' life and providing better clinical decisions.
- Applications of machine learning and data mining can change the available data to valuable information that can be used for recommending appropriate drugs by analyzing symptoms of the disease.
- In this projrct, a machine learning approach for multi-disease with drug recommendation is proposed to provide accurate drug recommendations for the patients suffering from various diseases.

Related Work

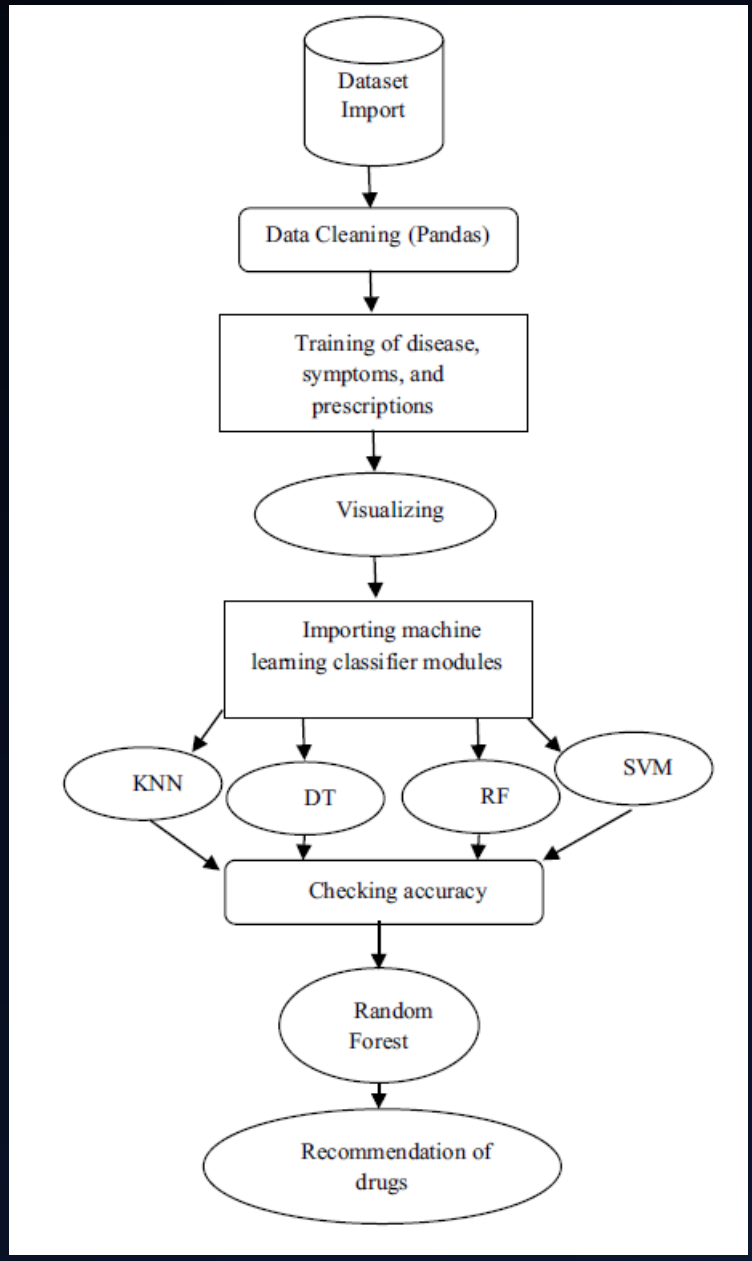
- Recent advances in biotechnology have led to the production of genetic data and medical information which are generated from the Electronic Health Records(EHR). Such data can be converted into valuable information using machine learning and data mining approaches.
- Kavakiotis et al.[1] investigated the applications of machine learning and data mining approaches for predicting, detecting, complications, and management

- A technique for predicting the health of a fetal based on maternal medical history using machine learning approaches was presented in the work comprised of gathering dataset from 96 pregnant women and applying the data to the machine learning classifiers[2]
- Kuteesa et al. surveyed machine learning techniques in HIV clinical research; the study concluded that there is a steady increase in the production of genetic data which needs machine learning techniques for translating information to knowledge
- A machine learning technique for detecting type-2 diabetes was presented in [3], where a data-informed framework is proposed using machine learning via feature engineering, the proposed was found effective in identifying medical subjects from an Electronic Health Record (EHR).

Proposed Methodology

- We use dataset containing the dataset contained admission ID, Sex, Age, disease symptoms, and its prescriptions.
- First, the dataset is subjected to pandas tool for cleaning, which is then subjected to train various machine learningmodels for prediction, with the help of confusion matrix, the accuracy of the classifiers were calculated, and the classifier with high accuracy were applied to the test dataset for predicting and recommending drugs to the patients.

Proposed Framework



Requirements

- pandas, NumPy
- Ipython, SciKit_Learnllet
- SciPy, StatsModels, and Matplotlib libraries
- A PC with minimum 4GB Ram

References

[1] Kavakiotis I, Tsave O, Salifoglou A, Maglaveras N, Vlahavas I, Chouvarda I (2017) Machine learning and data mining methods in diabetes research. Comput Struct Biotechnol J 15:104–116

[2] Akbulut A, Ertugrul E, Topcu V (2018) Fetal health status prediction based on maternal clinical history using machine learning techniques. Comput Methods Programs Biomed 163:87–100

[3] Zheng T, Xie W, Xu L, He X, Zhang Y, You M, Yang G, Chen Y (2017) A machine learningbased framework to identify type 2 diabetes through electronic health records. Int J Med Inf 97:120–127