Intelligent Diagnosis model

PRESENTED BY-

TEAM- PREDICTIVE INSIGHTS

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Problem Category:

Healthcare

Problem Statement

- In such unprecedented times, with a fragile healthcare infrastructure, the medical facilities for people are scarce and even fewer for people with special needs. The healthcare sector got so pre-occupied with Covid-19 cases that people with other ailments didn't even get a chance to avail medical assistance.
- Here, we derive some measures of what can be done to mitigate the scarcity of facilities and to address the lack of medical management.

Our Existing System

- Diagnosis of the any condition solely depends upon the Doctor‘s institution and patient’s records.
- The disadvantages are:
  - Detection is not possible at the earlier stages.
  - In the existing system, practical use of various collected data is time consuming.

OBJECTIVE

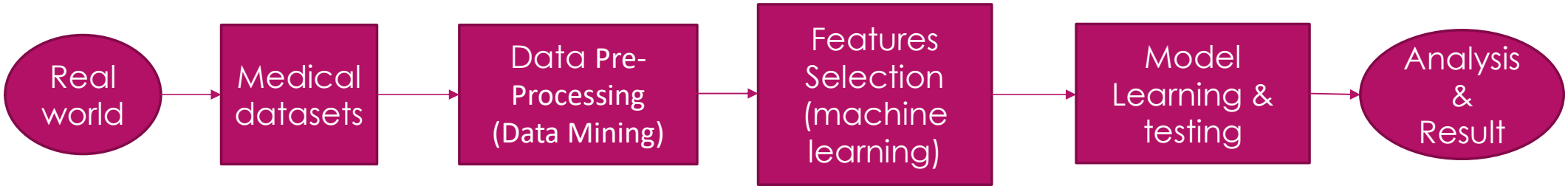
The health problem is the gap between an acceptable or desirable health status and the current status.

- To develop machine learning model to predict future possibility of disease by implementing suitable Machine Learning Algorithms.
- Integration of clinical decision support with computer-based patient records could reduce medical errors, enhance patient safety, decease unwanted practice variation and improve practice outcome which can help significantly improve the quality of clinical decisions
- to develop an Intelligent Diagnosis System using the data mining modelling technique & Integrate doctors and patients via interacting and user-friendly interface so that Patient can easily utilize in emergency situations.
- Hospitals must also minimize the cost of clinical tests. They can achieve these results by employing support systems.

Idea/Approach

- The main purpose of this exercise is to forecast Disease using the patients Medical data set attributes. The system proposed was developed to classify people with suffering from Diseases and healthy individuals. The efficiency of various predictive models for the diagnosis of disease have been evaluated on complete and selected apps. The commonly used computer modules generate a detailed report using a powerful predictor algorithm that give highly accurate model regarding patients safety.

- The main goals of the present framework are to evaluate and test patients with condition results and new patient diseases in order to evaluate the potential for a particular person to develop any type of disorder.



DOCTOR Module

- view all patient details and their medical history
- Collect and Check all attributes of patients
- The result is display on a screen whether the person is suffering or not from any diseases.
- After result give proper advice to patients

PATIENT Module

- Register and upload details
- If already registered, view and update details
- Get consultation based on the result
- In emergency situation, give instant treatment methods at anywhere by own.

Attributes required:- age, sex, chest pain, rest blood pressure, cholesterol level, diabetes, ECG, max heart range, angina, old peak, sis lope, blood vessels, thalassemia and many more.

Augmented Diagnosis

- We have observed that some patients find it challenging to describe their symptoms to doctors accurately.
- Using AR, patients will be able to express their symptoms better. The process will make it easier for doctors to determine their patient's symptoms and accurately diagnose them.
- When patients not able to the hospital, then how patients able to access any doctor appointment & how doctor manage to give action according to patients health.

Tools & Technologies

- Web Development

  VS Code, HTML, CSS, ReactJS, Django etc.

- Augmented Reality

  Unity, Vuforia SDK, AR Core, A Frame, JDK, Augmented Reality integrated with Machine Learning

- Machine Learning

  Anaconda, Jupyter Notebook, Exploratory Data Analysis, Kaggle, Data Collection, Data Cleaning, Data Visualisation, NumPy, Pandas, Seaborn, SciPy, Matplotlib(pyplot), Statsmodels, Pandas, Sklearn Libraries, Machine Learning Algorithms & build models.

Social Impact Analysis

- Integration of clinical decision support with computer-based patient records could reduce medical errors, enhance patient safety.
- It deceases unwanted practice variation and improve practice outcome which can help significantly improve the quality of clinical decisions.
- Reduce disease identification time and start treatment expeditiously.
- Reduce the cost of medical tests & by providing initial diagnostics in time that reduce huge amount of burden on patient's family.

Potential problems which could be faced

- Availability of records to develop an Intelligent Diagnosis System.
- Solution:
  - Approach medical colleges and explicate them about the system and asking patients medical history for dataset.
  - convincing any medical related NGOs and Laboratory where patients goes for checkup to help in our project to develop large amount of medical dataset to give high accuracy to our Model.

Thank You