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DISEASE PREDICTION BY MACHINE LEARNING OVER BIG DATA FROM HEALTHCARE COMMUNITIES

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Abstract:- The outcomes exhibit that mix of various medication properties to speak to drugs are important for ADR expectation of consolidated prescription and the determination of profoundly sound negative examples can altogether improve the forecast presentation. Early and precise ID of potential antagonistic medication responses (ADRs) for joined prescription is indispensable for general well-being. A technique to speak to drugs appropriately and to choose dependable negative examples gets essential in applying AI strategies to this issue. In this work, we propose an AI strategy to foresee ADRs of joined drug from pharmacologic databases by working up exceptionally sound negative examples (HCNS-ADR).

Keywords- *Machine Learning, SVM Algorithm, K-Mean.*

I INTRODUCTION

Prescription and medicinal services are experiencing significant changes. Analysts cannot only predict the risk of disease formation in the human body but also with the help of social insurance information, they can give arrangements. Applying AI systems (clustering, regression, classification etc.) in biomedical engineering, researchers now ready to recognize when cell harm or tumor will happen in human body. Drug combined medication refers to the scenario where two or more drugs are taken together or correspondingly. It is extremely regular in treatment and clinical practice. For example, it is estimated that upto 82 Americans take one or more drugs, and 29 take multiple medications together. Consider all medications have a little possibility of symptoms, taking various needs joined definitely expands the general danger of antagonistic medication responses (ADRs) and presents the extra threat of communications between meds. Medication sedate communications (DDIs) from combined prescription have been reported to represent 30 of all ADRs, coming about in significant casualty and grimness. Thus, early identification of potential ADRs for joined prescription is fundamental to improve tranquilize well-being and counteract drug blunder. AI has been the subject of extraordinary enthusiasm for the biomedical network since they offer potential for improving the understanding the analysis of infection. Additionally, it helps the health care professionals to decide what to do based on the output from the system that uses AI highlights

II PROBLEM STATEMENT:

The objective of machine learning is to allow a system to learn from the past or present and use that learned knowledge to predict or decide regarding unknown future events. In this paper a patient oriented framework using big data and K-means clustering is proposed to help the patients in real time.

III LITERATURE SURVEY:

1. Project Name:A Patient Oriented Framework using Big Data & C-means Clustering for Biomedical Engineering Applications.

Abstract: Big data and Machine Learning have changed the healthcare research in recent years. Data generated from Electronic Health Records (EHRs) and other clinical sources now can be used further to help the patients. By applying Big Data Analytics (BDA) into healthcare data, it is possible to predict the outcome or the effects of drugs or risk of developing disease on human body. Several machine learning algorithms such as clustering, classification are used to analyze healthcare data. In this article, a framework is proposed using C-means Clustering for Biomedical Engineering applications. The framework can be used to help both the clinicians and the patients. For example, using this framework, a clinician can make a decision to prescribe

suitable drug to a particular patient. In order to develop this framework, data has been collected from UCI machine learning repository. The data then analyzed using a well-known big data framework Hadoop.

Author: Md Mahbub Mishu .

2. Project Name: Co-clustering of Diseases, Genes, and Drugs for Identification of Their Related Gene Modules.

Abstract: Finding gene clusters that can be shared between drugs and diseases plays an important role in drug discovery. Targeting disease causing genes directly in drug development can increase the chance of drug approval through the clinical phase. This paper introduces a new co-clustering approach on the tripartite graph of genes, drugs, and diseases. As a result of co-clustering, gene modules and their related drugs and diseases are identified. It is shown that identified gene modules are functionally related. In addition the resulted gene modules are closely connected to each other in the protein-protein interaction network compared to that of random gene selection. The resulting gene modules can be used for investigating the genes that can be targeted with new drugs for treatment of diseases that are co-clustered with them. The proposed method is scalable and can be used for other multi-view graph co clustering applications like social networks.

Author: Arezou Koohi and Houman Homayoun ,Jie Xu , Mahdi Orooji .

3.Project Name: Feasibility Study for Focusing Electric Fields to Mediate In vitro Drug and Gene Delivery .

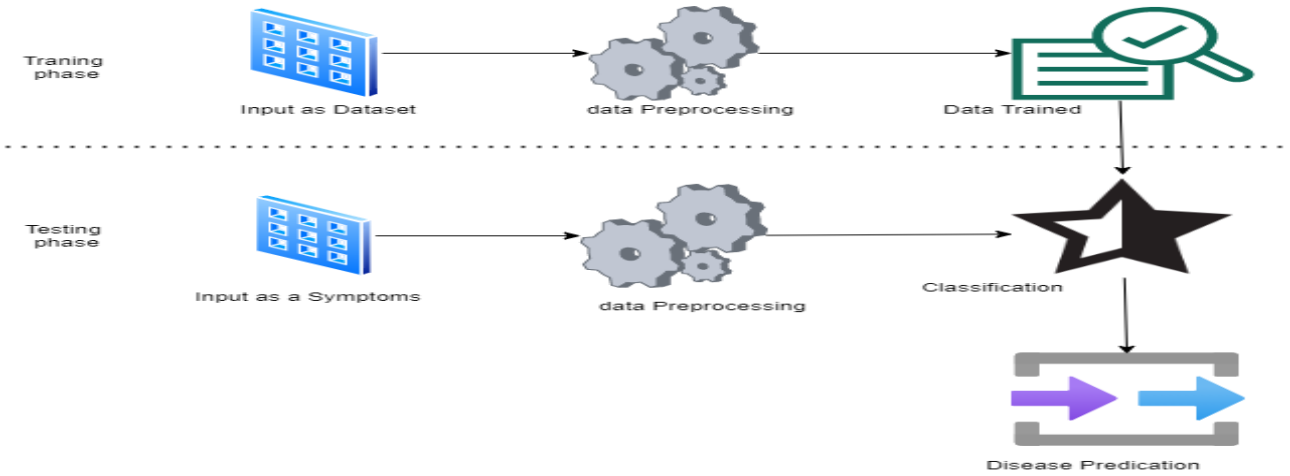
Abstract: Electric field mediated drug and gene delivery is a novel method that uses pulsed electric fields to improve permeability of cell membranes and therefore desired agent uptake by tissues. In this paper, we describe the modelling and experimental proof of concept of a method to direct electric fields to subsequently focus drug or gene uptake at a desired site. The in vitro experimental results presented are consistent with simulation models and could be scaled into different in vivo applications that can concentrate the effects of electroporation and overcome several problems related to localized effects near the electrodes.

Author: Jose I. Rey, Mark J. Jaroszeski, Richard A. Gilbert.

4. Project Name:A Telemetric Pressure Sensor System for Biomedical Applications.

Abstract: A new implantable pressure sensor for long-term monitoring of intracranial pressure is presented. The sensor is powered by telemetry and can be interrogated wirelessly. A capacitive pressure transducer, whose capacitance is converted to a frequency-encoded signal by an application specific integrated circuit (ASIC), senses the absolute pressure. The pressure-encoded signal, the ASIC input voltage, and onboard calibration parameters are transmitted to an external reading unit. The proposed novel packaging solution is designed for long-term stability and reliability of the sensor. The accuracy of sensor at body temperature is better than 2 mbar across a pressure range of 600–1200 mbar. The sensor is 13 mm in diameter and 4.5 mm in height.

Author: Alec Ginggen, Yanik Tardy, Rocco Crivelli, Toralf Bork, and Philippe Renaud .



IV PROPOSED SYSTEM:

The proposed system has various users namely Administrator, Doctor, Analyst/Researcher. The role of the administrator is to add or remove users. The Doctor's role includes naming the disease and their symptoms in database. The role of the analyst is to choose the parameters for the analysis and apply K-means &SVM algorithm to the data. The parameters can be in the form of dates, gender or age. Once the analyst chooses required parameter, he/she can select the representation method in which the desired output will be displayed.

V FUTURE SCOPE:

- Person become habitual of medicines.
- Consuming drugs for a long period of time results into no effects and hence the disease is incurable.

VI CONCLUSION:

A framework is proposed using big data and K - means clustering method to select drugs for patients. Big Data Analytics combining with machine learning has brought a new era for biomedical engineering research. From biomedical classification, machine learning plays a key role in today's world. The proposed framework shows the significance of incorporating machine learning and big data in healthcare research. SVM Algorithm use to classification in big healthcare data. Currently, the proposed framework shows performance based on K-means clustering. In future, this framework will be used to estimate the accuracy of the data and this will help the healthcare professionals to make clinical decisions.

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