ISSN No:-2456-2165

Survey on Classification Techniques in Healthcare

[1.]Shrikant A. Shinde, [2.]Akanksha Tilekar, [3.]Shrutika Raikwad, [4.]Sanika Bishnoi, [5.]Yashaswini Mahajan
Department of Computer Engineering
Sinhgad Institute of Technology and Science, Narhe, Pune,Savitribai Phule Pune University

Abstract:- The pharmacy management system, also known as the pharmacy information system, is a system that stores data and enables functionality that organizes and maintains the medication used within pharmacies. The purpose of Medical Store Management System is to automate the existing manual system by the help of computerized equipment's and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Currently, machine- learning (ML) algorithms are valuable for pharmacy management system. This provides the local entrepreneurs with a complete tech suite to run and automate their business operations. Pharmacy management system includes features like Web-based ordering systems, Stock organization and counting, Medication ordering, Reporting, E-prescribing, Automatic compound pricing and billing. The paper reviews the existing literature on the topic and provides insights into the future of machine learning in pharma management stores. Overall, the survey paper aims to provide a comprehensive overview of the current state of machine learning- based pharma management stores and highlight their potential impact on the pharmaceutical industry.

Keywords:- *Machine-Learning Algorithms, Automatic Compound Pricing,Pharmacy Management System.*

I. INTRODUCTION

In recent years, the pharmaceutical industry has seen a significant increase in demand for effective management systems to streamline and optimize various operations, such as inventory management, supply chain management, and customer service. With the emergence of machine learning technology, the industry has been able to leverage its potential to revolutionize the way pharmaceutical management stores operate. In this survey paper, we will explore the applications of machine learning in pharma management stores and how it has transformed the industry. We will delve into the various machine learning techniques that have been used to optimize inventory management, identify fraudulent activities, and enhance customer service. Additionally, we will also discuss the challenges associated with the implementation of machine learning-based systems and how the industry is overcoming them. The objective of this survey paper is to provide a comprehensive overview of the current state of machine learning-based pharma management stores and highlight the potential for future growth in the industry. We hope that the insights provided in this paper will aid in the development of more efficient and effective pharma management stores that will ultimately improve the lives of patients and the overall functioning of the pharmaceutical industry. The need for efficient management systems to simplify and optimize numerous activities, including inventory management, supply chain management, and customer service, has significantly increased in the pharmaceutical business in recent years. The industry has been able to take use of machine learning technology's capacity to completely alter how pharmaceutical management stores function since its introduction. We will examine the uses of machine learning in pharma management stores and how it haschanged the sector in this survey report.

II. RELEVANCE

The Medication System for Pharma store eliminates the risk of errors and provides a user-friendly solution for patients. This feature also helps pharmacies to manage refills and allows doctors to send the new refills directly into the pharmacy information system. This project will increase in its efficiency with given input and is extremely helpful in situations of physical restraint due to remote locations. This system reduces the possibility of mistakes and offers patients a convenient option.

This function enables doctors to submit fresh refills directly into the pharmacy information system, aiding in the management of refills by pharmacies. With feedback, this project will become more effective and is very useful when there is physical constraint because of faraway places.

III. MOTIVATION

As we have visited few of the medical stores, we found that the software currently in use have few issues, the currents system is comparatively very slower, is it complex in nature which makes it difficult to use by non-tech field individuals to use, it does not contain any alert system to notify about drug's availability, that motivated us to build an efficient application for pharma stores. We were inspired to create an effective application for pharma stores after visiting a few medical stores and discovering that the software currently in use has a few drawbacks. It is comparatively very slow, is complex in nature, making it difficultfor non-tech field people to use, and it lacks any alert system to notify about drug availability. We found the system needs to get more advanced comparatively.

IV. LITERATURE SURVEY

In [1], the fused model (SVM+ANN) incorporates two commonly used machine learning approaches through the use of fuzzy logic. The proposed ambiguous choice system has outperformed previous system in accuracy, achieving a score of 94.87.

In [2], a validated RF-SMA-SVM model was created. Based on the experimental findings, the suggested method outperforms the SVM method based on other optimization algorithms in terms of prediction accuracy and performance stability while filtering out the important variables with strong discriminatory power.

In [3], The study used a variety of classifiers, such as Decision Tree (DT), Support Vector Machine (SVM), Random Forest (RF), K-Nearest Neighbor (KNN), Naive Bayes (NB), Multiple Perceptron (MP), J48 Trees, and Logistic Regression (LR) classifiers. In comparison to other classifiers, the proposed ensemble classifier beat individual classifiers in performance evaluation, achieving the best accuracy of 94%.

In [4], The four separate MSVM kernel functions of the support vector machine's MSVM model were used to categorise the six significant circumstances. For six sensor scenarios, the RBF kernel model provides the highest classification accuracy. The classification outcomes and statistical measurements were applied to the RBDT-MSVM model's evaluation. The overall accuracy of the categorization was 92.8571%. We may infer from the results above that an MSVM classifier with an RBF kernel function and RBDT is a top candidate for fault diagnosis of water quality monitoring equipment.

In [5], In order to accurately assess the patients' heart-disease status, the suggested HDPM was created and developed for the Heart Disease Clinical Decision Support System. The patient data, together with additional diagnosis data, were acquired by the HDCDSS and sent to a secure web server. After being transmitted, the data was saved in MongoDB, which can efficiently deliver a prompt answer. The patient's current heart disease status was then determined using the proposed HDPM, and the results were then communicated back to the HDCDSS's diagnosis result interface. A statistical review was also provided to support the model's significance. Experimental outcomes showed that the suggested model performed better than leading models and earlier study findings, with accuracy up to 95.90% and 98.40% for datasets I and II, respectively.

In [6], By using RBF-SVM decision classification and covariance matrix Cholesky decomposition, an effective method for blind spectrum sensing at low SNRs is described. An established SVM classification model is easily used to make the decision. The actual decision threshold has self-learning capability based on the SVM, which successfully distinguishes signals from sounds. In terms of computational complexity, the suggested approach performs better than the traditional MME scheme. Simulation findings show that the suggested technique performs better than traditional detection ones, especially at low SNRs, demonstrating its potential for 5G communications.

In [7], Regarding data imputation and sample diagnosis, the suggested CKD diagnostic methodology is workable. The integrated model could reach a sufficient level of accuracy after KNN imputation was used to impute missing values in the data set without supervision. So, it is hypothesized that using this technology to really diagnose CKD would produce favorable results. Unfortunately, only 400 samples of the available data were used in the model-building procedure because of the constraints imposed by the requirements. As a result, the model'sability to generalize may be constrained.

In [8], To distinguish AD from HC, a machine learning classifier based on SVM was created. The outcomes demonstrated that examining the spatiotemporal information of the body joints as it changed while being captured by a Kinect V.2 camera yielded significant features from several TUG test subtasks. The SVM classifier's average accuracy and F-score were 97.75% and 97.67%, respectively, when evaluated using five-fold cross validation, and 98.68% and 98.67% when evaluated using leave- one-subject out cross validation. Their results confirmed the possibility of the thorough analysis of TUG utilising a Kinect V.2 camera and machine learning as a simple and affordable complementary tool for the detection and routine quantitative assessment of AD in clinical or home settings.

In [9], A stacked SVM-based expert system was suggested to help with the diagnosis of heart failure. While the second SVM model served as a prediction model, the first SVM model was utilized to remove unnecessary characteristics. It was demonstrated that the suggested strategy outperformed eleven well-known methods that were already in use in the literature and other cutting-edge machine learning models. Also, it was noted that the strength of the suggested model outperforms the standard SVM model by 3.3%. The suggested approach is also effective in terms of time complexity. because the predictive model's training period is shortened. So, it can be inferred from the dataset's results that the suggested expert system can help doctors diagnose heart failure by improving their decision-making process.

In [10], The investigation on the identification and categorization of lamination flaws in the power transformer core was reported in this publication. Using a 15 kVA transformer, experimental results from a prior study were used. The conclusions are as follows.

- For the detection purpose, where two classes were taken into consideration, SVM, KNN, and DT classifiers provided a goodaccuracy rate of around 82%.
- The SVM method produced an accuracy rating for the

categorization of 84.26%. For KNN and DT classifiers, it was 84.04%. In particular for the DT method, the classification process was sensitive to the data decomposition.

- It was discovered that, in comparison to other classes, the insulating lamination fault exhibits a good accuracy rate. For thisclass, higher precision and recall were attained.

V. FUTURE SCOPE

There are several potential future developments for medication systems in pharmaceutical stores:

Personalized Medicine: With the advancement in technology, personalized medicine is becoming a reality. Medication systems in pharmaceutical stores can leverage this by using data-driven approaches to develop personalized medication plans for patients.

Telemedicine Integration: With the growth of telemedicine, medication systems can be integrated with telemedicine platforms to allow doctors to prescribe medications remotely and have them delivered to patients directly from the pharmacy.

Artificial Intelligence: Artificial Intelligence can be used to optimize medication systems by analyzing data from electronic health records, identifying drug interactions, and recommendingappropriate dosages.

Blockchain Technology: Blockchain technology can be used to create a secure and transparent medication supply chain. This can help prevent counterfeit drugs from entering the supply chain and ensure patient safety.

Automated Dispensing: Automated dispensing systems can help pharmacists manage their workload more efficiently by automating the dispensing process for routine medications.

Overall, the future of medication systems in pharmaceutical stores is likely to be focused on leveraging technology to improve patient outcomes, increase efficiency, and enhancepatient safety.

VI. CONCLUSION

Finally, we looked at 10 articles. The highlights and observations are found in the literature review. The gap has been investigated in light of the design of the problem description and its objectives. Also, the precise activity regimen is specified. The system supports the system's finaluser.

REFERENCES

[1]. Munir Ahmad, Muhammad Adnan Khan,Muhammad Farhan Khan,Taher M.Ghazal ”Prediction of Diabetes Empowered With Fused Machine Learning”,January 11,2022.
[2]. Peiliang Wu Huiling Chen ,Xiaoying Huang,Liangxing Wang, “An Effective Machine Learning Approach for Identifying Non-Severe and Severe Coronavirus Disease 2019 Patients in a Rural Chinese Population: The WenzhouRetrospective Study”, March 19,2021.
[3]. Muneer Ahmad, “An Enhanced Ensemble Diagnosis of Cervical Cancer: A Pursuit of Machine Intelligence Towards Sustainable Health”, January 5,2021.
[4]. Qiucheng Li, ”Fault Diagnosis of Water Quality Monitoring Devices Based on Multiclass Support Vector Machines and Rule-Based Decision Trees”, February 9,2018.
[5]. Muhammad Syafrudin, Jongtae Rhee,”HDPM: An Effective Heart Disease Prediction Model for a Clinical Decision Support System”, July 20,2020.
[6]. Chao Liu, ”Improved Blind Spectrum Sensing by Covariance Matrix Cholesky Decomposition and RBF-SVM Decision Classification at Low SNRs”, July 16,2019.
[7]. Vippon Preet Kour,Sakshi Arora,”Particle Swarm Optimization Based Support Vector Machine (P-SVM) for the Segmentation and Classification of Plant”, March 11,2019.
[8]. Bin Chen ,”A Machine Learning Methodology for Diagnosing Chronic Kidney Disease”,December30,2019.
[9]. Mahmoud Seifallahi , Afsoon Hasani Mehraban,”Alzheimer’s Disease Detection Using Comprehensive Analysis of Timed Up and Go Test via Kinect V.2 Camera and Machine Learning”,2022.
[10]. Liaqat Ali,Syed Ahmad Chan Bukhari,”An Optimized Stacked Support Vector Machines Based Expert System forthe Effective Prediction of Heart Failure”,2019.
[11]. Shrikant A. Shinde, Sakshi Bondre, Priyanka Parmar, Khushboo Patil, Pratiksha Yewalkar, “An Social Distance Violation Detector System”, International Journal of Innovative research in Engineering, Vol 3 , Issue 3, PP 191-195, May-June 20222.
[12]. Shrikant A. Shinde, Bhavesh Patil, Mrunali Ghate, Poonam Shinare, Ajay Patil, “Skin Burn and Skin Cancer Detection using Image Processing ”, International ResearchJournal of Engineering and Technology, Vol 9, Issue 6, June 2022.