

Simulation of Performance of Medicine Prescription System

Neeraj Kumar

Department of Computer Science Engineering
IIET, Kinana, Jind, Haryana, India - 126102

Abstract— In this research we have reduced error rate and increase speed of in existing SVM-KNN. We have used Matlab to make comparative analysis in performance of Traditional model and proposed model. Internet of Things concept arises from need to manage, automate, & explore all devices, instruments, & sensors in world. Data mining involve discover novel, interesting, & potentially useful models from data & apply algorithms to removal of hidden information. Amount & class of many health care intervention are better through fallout of science, such as advanced through health check model of health which focus on eradication of illness through analysis & effective treatment.
Key words: Data Mining, Data Preparation, Pre-processing, Big data

I. INTRODUCTION

Data mining include use of sophisticated data analysis tools to discover formerly unknown, valid patterns & relationships in big data sets. This approach could include important models, algorithms, & machine learning methods such as neural networks or decision trees. Consequently, data mining consists of more than collecting & managing data, it also includes analysis & prediction. Data mining is to identify valid, possibly useful, & understandable patterns in existing data. Finding useful patterns in data is known by different. Term data mining is primarily used by statisticians, database researchers, & business communities.

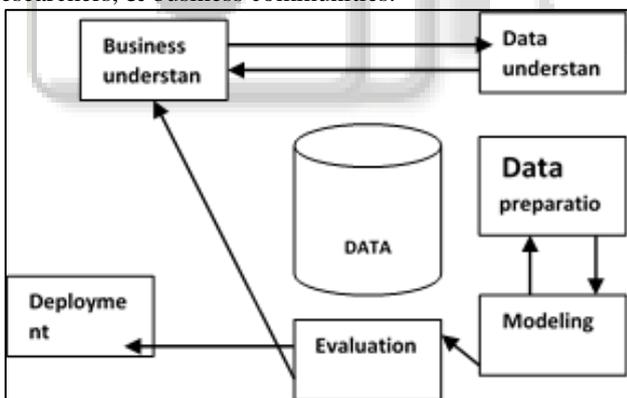


Fig. 1: Data mining

A. Process

1) The Knowledge Discovery in Databases process is commonly defined within stages:

- Selection
- Pre-processing
- Transformation
- Data Mining
- Interpretation/Evaluation

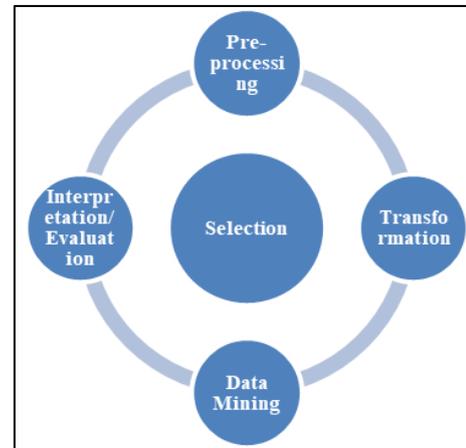


Fig. 2: KDD Process

It exists in some difference on this theme Cross Industry Standard Process for Data Mining which defines six phases:

- Business Understanding
- Data Understanding
- Data Preparation
- Modeling
- Evaluation
- Deployment

Polls conducted in 2002, 2004, & 2007 show that CRISP-DM methodology is leading methodology used by data miners. Only other data mining standard named in these polls was SEMMA. People are reported using CRISP-DM. Several teams of researchers have published reviews of data mining process models, & Alev do & Santos conducted a comparison of CRISP-DM & SEMMA in 2008.

B. Pragmatic Application of Data Mining in Healthcare

When these principles are in place, we had seen clients make some very energizing progress. Once they enhancement analytics groundwork to mine data & they had content & organizational systems in place to make data mining insights actionable, they are now ready to use predictive analytics in new & innovative ways. One client is a health system trying to succeed in risk-based contracts while still performing well under fee-for-service reimbursement model. Transition to value-based purchasing is a slow one.

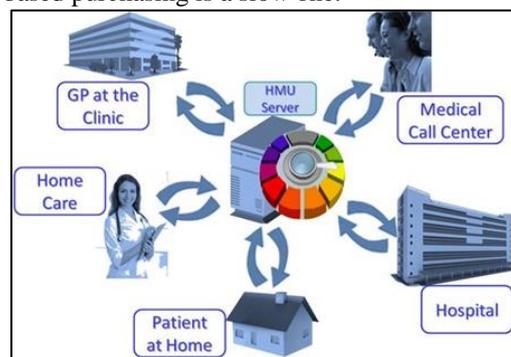


Fig. 3: Pragmatic Application of Data Mining in Healthcare

II. DATA MINING TO IMPROVE PRIMARY CARE REPORTING

The first initiative mines historical EDW data to enable primary care providers to meet population health regulatory measures. This clinic's PCPs must demonstrate to regulatory bodies that they are giving appropriate screenings & treatment to certain populations of patients. Their focus to date had been on A1c screenings, mammograms for women over 40, & flu shots. EDW & analytics applications had enabled PCPs to track their compliance rate & to take measures to ensure patients receive needed screenings.

III. BIG DATA IN HEALTH INFORMATICS

The term Big Data is a vague term within a definition that is not universally agreed upon. According to, a rough definition would be any data that is around a petabyte or more in size/

IV. DATA MINING APPLICATION AREAS

Data mining is driven in part by new applications which require new capabilities that are not currently being supplied by today's technology. These latest applications could be physically into two group.

- Business & E-Commerce
- Scientific, Engineering & Health Care Data

A. Data Mining Tasks

1) Data mining tasks are mainly classified into two broad categories

- Predictive model
- Descriptive model

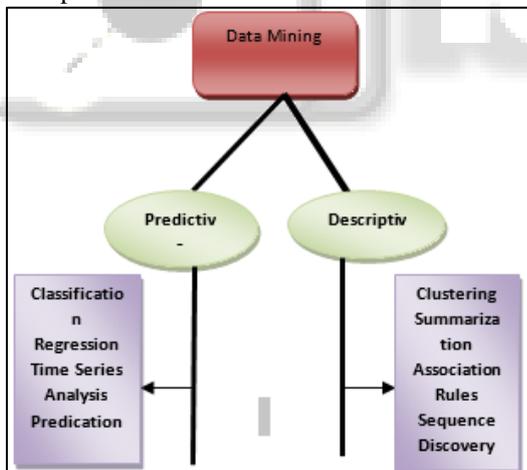


Fig. 4: Data mining tools

V. PROPOSED WORK

In existing health care centres Patients connects to health care centre interface & it is stored in huge data ware house. In same way information is captured from different health care centres & stored in huge data ware house of multi health care centres.

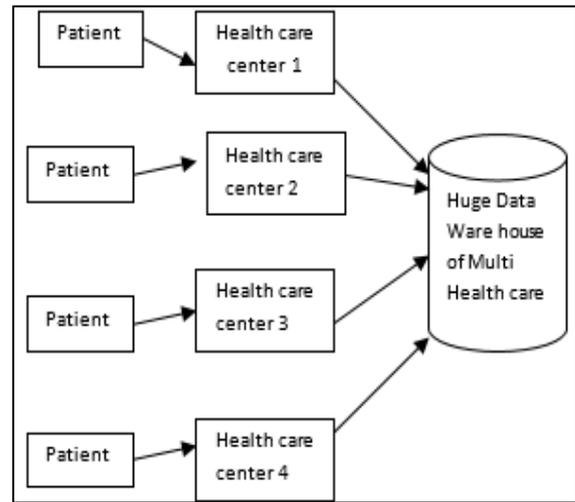


Fig. 5: Existing Health care Centre Model

The objective of our research is to enhance capabilities of present medicine prescription health care systems by introducing fast retrieval &

- 1) To develop a system where patients from different location could log in to health care center for services within medicine prescription system.
- 2) Record must be maintained at Centralized Data Ware House.
- 3) The Retrieval of Data must be fast.
- 4) To Provide secure access to Patient.
- 5) To Avail Backup.
- 6) Applying Clustering Mechanism for Faster Data Access

VI. IMPLEMENTATION

In research we have discussion a comparative study of diabetes in healthcare sector weka tools. Mainly weka tool are used to predict successful results from data recorded on healthcare problems. Different data mining tools are used to predict accuracy level in different healthcare problems. In this study, following list of medical problems had been analyzed and evaluated as following: Preg, Plas, Pres, Skin, insu, mass, pedi, age, class etc. Attributes are 9 & instances are 768. Totals tested are 500 & positive are 268.

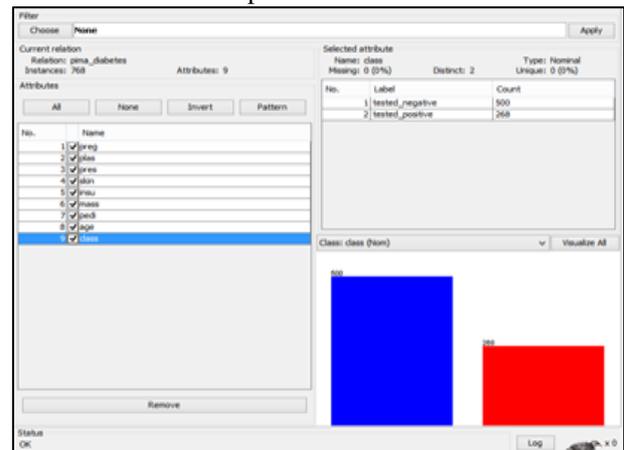


Fig. 6: Show different diabetes in positive & negative tested

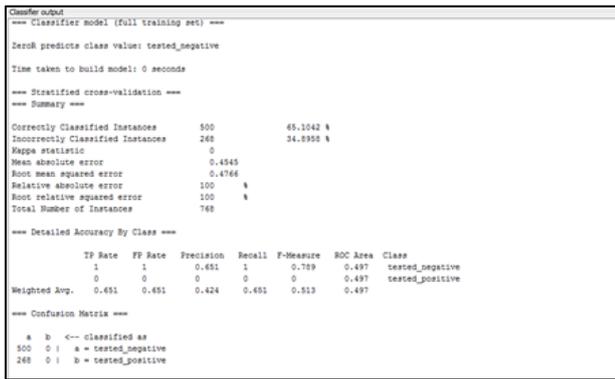


Fig. 7: Show tested negative & positive

In tangent distance case, it is quite remarkable that SVM-KNN could improve on performance of NN with very small additional cost, even though latter is performing very well already in comparison to human performance.

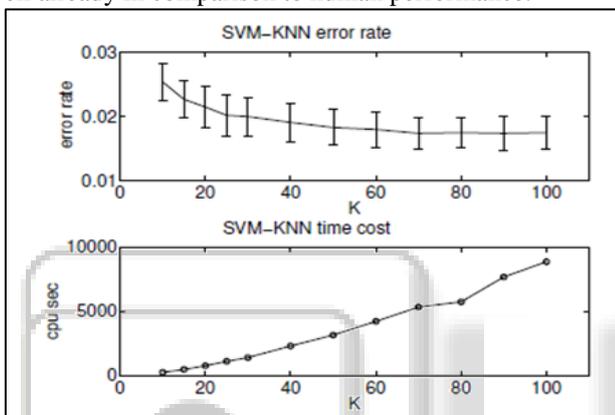


Fig. 8: SVM-KNN Error rate and Time cost

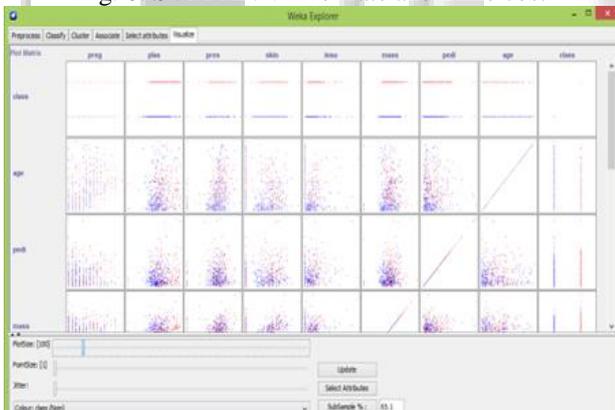


Fig. 9: Weka Explorer

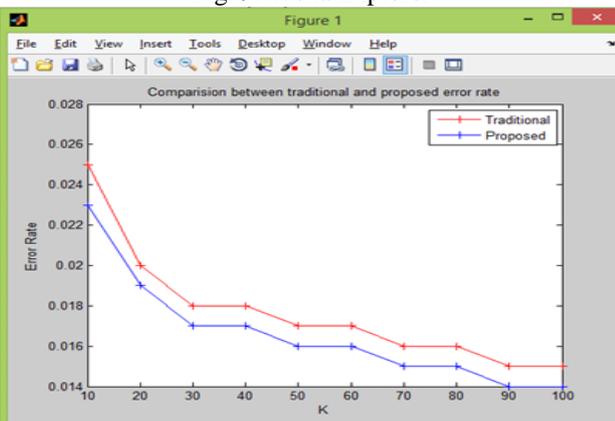


Fig. 10: Comparison of error rate between both models

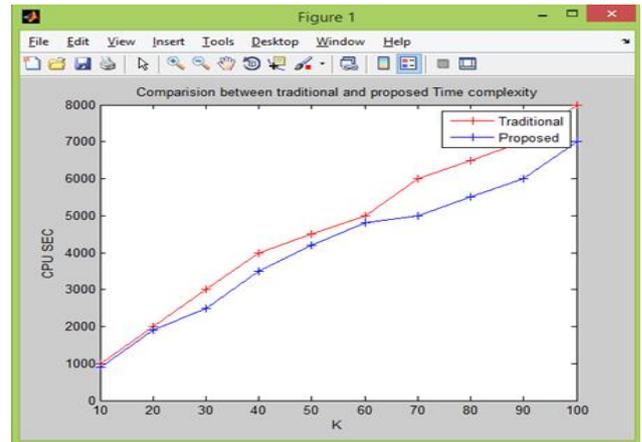


Fig. 11: Comparison of time complexity between both models

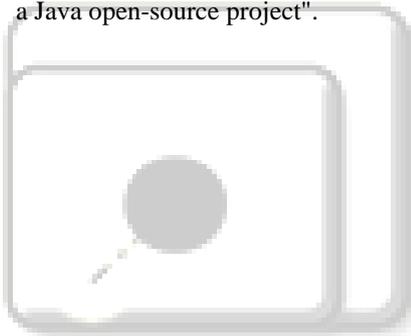
VII. CONCLUSION

The main aim of our research is to use data mining in Health care system. In this research we have reduced error rate and increase speed of in existing SVM-KNN. We have used Matlab to make comparative analysis in performance of Traditional model and proposed model. Internet of Things concept arises from need to manage, automate, & explore all devices, instruments, & sensors in world. Data mining involve discover novel, interesting, & potentially useful models from data & apply algorithms to removal of hidden information. Amount & class of many health care intervention are better through fallout of science, such as advanced through health check model of health which focus on eradication of illness through analysis & effective treatment.

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