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Analytics for Hospital Health Care Data

Ms. Anitha V[1,] Dhasaratha Maharajan M[2], Dilip Kumar S[3], Dinesh kumar S[4], Gowtham G[5]

UG Students, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering,

Hosur, Krishnagiri, Tamil Nādu, India.[1]

Associate Professor, Department of Electronics and Communication Engineering, Adhiyamaan College of Engineering,

Hosur, Krishnagiri, Tamil Nādu, India.[2]

ABSTRACT: The proposal of this project is to analyze the data in healthcare care industries to predict the LOS of the incoming patient. The goal is to accurately predict the Length of Stay for each patient on case-by-case basis so that the Hospitals can use this information for optimal resource allocation and better functioning. The length of stay is divided into 11 different classes ranging from 0-10 days to more than 100 days. In hospitals, Clinical Decision Support (CDS) software analyses medical data on the spot, providing health practitioners with advice as they make prescriptive decisions. CDS software will collect patients' health data continuously and send this data to the cloud.

KEYWORDS: Disease prediction, health care management, information source.

I.INTRODUCTION

A health information system (HIS) refers to a system designed to manage healthcare data. This includes systems that collect, store, manage and transmit a patient's electronic medical record (EMR), a hospital's operational management a system supporting healthcare policy decisions.

II.OBJECTIVE

To develop the present healthcare analytics system i.e., developing centres on working for a brighter, bolder future in the medical industry To identify patients of high LOS-risk (patients who will stay longer) at the time of admission in hospitals.

III.LITERATURE SURVEY

1	Robust length of a stay prediction model for indoor patients	Ayesha Siddiqa, Syed Abbas Zilqurnian Naqvi, Ahsan Naeem,	2021	The length of stay of patients with different diseases is identified. So that the hospital can manage the available resources and new patients get entries for their prompt treatment.	92%

2	Predicting length of stay in hospital intensive care unit using general admission features	Merhan A. Abd- Elrazek, Ahmed A. Eltahawi, Mohamed H. Abd Elaziz, Mohamed N. Abd- Elwhab	2021	This paper is based on the length of stay of patients in the ICU. Here the data is pre- processed and the dataset is divided into Fold cross validation. ML techniques used are Neural Networks(NN), Classification Tree (CT).	92%
3	Predicting inpatient length of stay at hospitals using python + big data	Vishal Tien	2020	In this study, the paper describes creating a model that can predict the length of stay for patients upon admission to a hospital.	70%

IV.PROBLEM SOLUTION STATEMENT

The hospitals need a way to accurately predict the Length of stay for each patient at the time of admission so that the patients with high LOS have their treatment plan optimized on minimum LOS and also the hospital resources such as rooms and beds are efficiently utilized.

V.EMPATHY MAP CANVAS

The hospitals need a way to accurately predict the Length of stay for each patient at the time of admission so that the patients with high LOS have their treatment plan optimized on minimum LOS and also the hospital resources such as rooms and beds are efficiently utilized.

VI.TEST THE DATA

Now that we have trained both the models' let's test both the models by loading the saved models. let's create another notebook for testing. The model is to be tested with different images to know if it is working correctly.

Import the packages and load the saved model Import the required libraries initially, we will be loading the fruit model. You can test it with the vegetable model in a similar way initially, we will be loading the fruit model. You can test it with the vegetable model in a similar way.
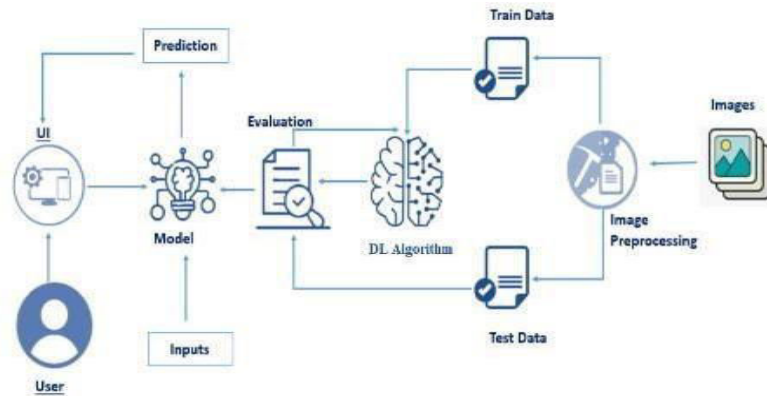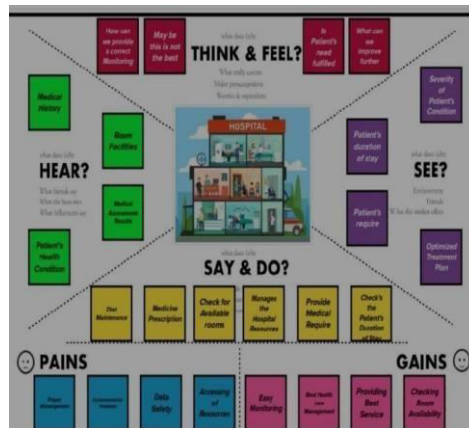
Fig :1 Block Diagram

Fig :2 Effect of health care system

VII.PROBLEM STATEMENT DEFINITION

The hospitals need a way to accurately predict the Length of stay for each patient at the time of admission so that the patients with high LOS have their treatment plan optimized on minimum LOS and also the hospital resources such as rooms and beds are efficiently utilized.

ADVANTAGES:
Increase the efficiency of the work. The analytics keeps you updated of your customer behavioural changes. Personalization of hospital details. Improving quality of service and health care.

DISADVANTAGES:
Lack of alignments within a team. Lack of commitment and patience. Low quality of data. Privacy concerns

VIII.RESULTS AND DISCUSSION

The proposed method is expected to achieve reducing the cost of healthcare operations and processes. Hence, the treatment cost for patients will gradually go down. Not only this, healthcare data analytics has opened the doors to a plethora of job opportunities for qualified and skilled data analytics professionals

IX.CONCLUSION

Data analytics in health care is vital. It helps health care organizations to evaluate and develop Number of patients by ward, Age wise patients with department details, Various types of visualizations to analyse the hospital's datasets and hence predict outbreaks in illness, Data analytics can also lower costs for health care organizations and boost business intelligence.

X.FUTURE SCOPE

While every fact of the industry stands to be changed by data analytics in healthcare, data has significantly improved healthcare in three areas: conducting medical studies, understanding the cost of medical tests and health insurance, and making preventative recommendations to patients.

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BIOGRAPHY

Ms Anitha V .,ME.,ph.D., Department of ECE Asistanat professor, Adhiyamaan college of engineering.
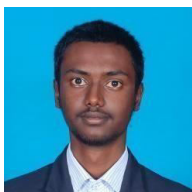

Dhasaratha Maharajan M Bachelor of Engineering (Student), Adhiyamaan college of engineering, Anna university.

Dilip Kumar S
Bachelor of Engineering (Student), Adhiyamaan college of engineering, Anna university.

Dinesh Kumar S
Bachelor of Engineering (Student), Adhiyamaan college of engineering, Anna university.

Gowtham G
Bachelor of Engineering (Student), Adhiyamaan college of engineering, Anna university.

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