HOSPITAL RESOURCE MANAGEMENT AND INPATIENT'S LENGTH OF STAY ANALYSIS AND PREDICTION USING MACHINE LEARNING TECHNIQUES

A PROJECT REPORT

Submitted by

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of

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In

COMPUTER SCIENCE AND ENGINEERING

CHRIST THE KING ENGINEERING COLLEGE, KARAMADAI

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BONAFIDE CERTIFICATE

Certified that report "HOSPITAL RESOURCE MANAGEMENT AND INPATIENT'S LENGTH OF STAY ANALYSIS AND PREDICTION USING MACHINE LEARNING" is the bonafide work of E SELVA KUMAR (710419104044), who carried out the project work under my supervision.

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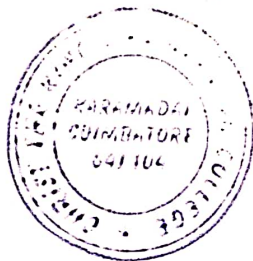Karamadai, Mettupalayam Taluk,
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ABSTRACT

The goal of this project is to predict the length of stay for patients in a hospital using machine learning techniques. Accurately predicting patient stay duration can help hospitals optimize resource utilization, improve patient outcomes, and reduce healthcare costs. The project will involve analyzing a large dataset of patient information, including demographics, medical history, diagnoses, procedures, and medication orders. The dataset will be preprocessed and feature engineered to create a set of relevant predictors for the machine learning model. Several machine learning algorithms will be evaluated to determine the best performing model for predicting patient stay duration. The performance of the models will be evaluated using various metrics, including r2_score, mean_square_error, root_square_error and mean_absolute_error. The project will also involve interpreting the results of the machine learning models to gain insights into the factors that contribute to longer or shorter patient stays. These insights can help hospitals identify areas for improvement in patient care and resource utilization. Overall, the hospital stay prediction using machine learning project aims to develop an accurate and interpretable model for predicting patient stay duration that can help hospitals improve patient outcomes and reduce healthcare costs.

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CONCLUSION

In conclusion, hospital stay prediction using machine learning techniques has the potential to greatly improve healthcare outcomes by allowing healthcare professionals to better allocate resources, plan patient care, and reduce the overall length of hospital stays. Through the use of various algorithms and predictive models, machine learning can accurately predict the length of a patient's stay based on various factors such as demographics, comorbidities, and laboratory results. However, the effectiveness of these models is highly dependent on the quality and quantity of data used for training, as well as the choice of appropriate features and algorithms. Therefore, further research is needed to refine and improve the accuracy of hospital stay prediction models. Overall, the development and implementation of machine learning models for hospital stay prediction is an important step towards improving the efficiency and effectiveness of healthcare deliver.

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REFERENCE