ANALYTICS FOR HOSPITALS' HEALTH-CARE DATA

LITERATURE SURVEY

TITLE - Machine Learning model for predicting the length of stay in the intensive care unit for covid – 19 patients in the eastern province of Saudi Arabia

AUTHOR - Dina A. Alabbad, Abdullah M. Almuhaideb, Shikah J. Alsunaidi, Kawther S. Alqudhaihai, Fatimah A. Alamoudi, Maha K. Alhobaishi, Naimah A. Alaqeel, Mohammed S. Alshahrani

YEAR - 2022

DESCRIPTION - To predict the length of stay of a patient. Here we employed four algorithm Random Forest(RF), Gradient Boosting(GB), Extreme Gradient Boosting (XG Boost), Ensemble Models. Through this experiments the prediction is done in this algorithm Random Forest gives the highest accuracy when compared to other methods

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TITLE - Time - to – event modelling for hospital length of stay prediction for covid – 19 patient

AUTHOR - Y. Wen, M.F. Rahman, Y.Zhuang et al, Michael Pokojovy, Honglun Xu, Peter McCaffrey, Alexander Vo, Eric Walser, Scott Moen, Tzu-Liang (Bill) Tseng

YEAR - 2022

DESCRIPTION - This study uses a technique called time - to – event modelling which is also known as survival analysis. It uses algorithm like Logistic regression, Random forests, Support Vector Machine, Decision free – based methods. The survival analysis is a branch of statistics concerned with analysing time - to - event data and predicting the probability of occurrence of an event. The event could be any format

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TITLE - Robust length of stay prediction model for indoor patients

AUTHOR - Ayesha Siddiqa, Syed Abbas Zilqurnian Naqvi, Ahsan Naeem, Allah Ditta, Hani Alquahayz, Muhammad Adnan Khan

YEAR - 2021

DESCRIPTION - The length of stay of patient of different disease is identified. So that the hospital can manage the available resources and new patient getting entries for their prompt treatment. Here they use algorithms such as Ridge Regression(RR), Decision Tree Regression Extreme Gradient Boosting Regression (XGBR), Random Forest Regression (RFR). Process like Raw dataset are processed then exploring the data, Machine learning modelling, performance measuring, selection of robust model based on the performance.

TITLE - Predicting length of stay in hospitals intensive care unit using general admission features

AUTHOR - Merhan A. AbdElrazek, Ahmed A. Eltahawi, Mohamed H. Abd Elaziz, Mohamed N. AbdElwhab

YEAR - 2021

DESCRIPTION - This paper is based on length of stay of patient in the ICU. Here the data is pre-processed and the dataset is divided into K fold cross validation. ML techniques used are Neural Networks(NN), Classification Tree(CT), Tree Bagges(TB), Random Forest(RF), Fuzzy Logic(FL), Support Vector Machine(SVM), KNN, Regression Tree(RT) and Navie Bayes(NB). Proposed techniques are data acquisition, data preprocessing, data transformation, training and testing

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TITLE - Predicting inpatient length of stay at hospitals using python + bigdata

AUTHOR - Vishal Tien

YEAR - 2020

DESCRIPTION - In this study the paper describes to create a model that can predict length of stay for patients upon admission to a hospital. The algorithms used is Logistic Regression, Boosted Decision Tree, Random forest. In this the APR DRG code, a classification system that classify patients according to the reason of admission, severity of illness and a risk of mortality and the APR severity of illness score are the most important feature In predicting the patients length of stay.