

# LITERATURE SURVEY

Date	19 October 2022
Team ID	PNT2022TMID36912
Project Name	Project – Analytics For Hospital Health-Care Data
Maximum Marks	2 Marks

	PAPER	AUTHOR	YEAR	METHOD AND ALGORITHM	ACCURACY
1	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	Dina A. Alabbad, Abdullah M. Almuhaideb, Shikah J. Alsunaidi, Kawther S. Alqudhaihai, Fatimah A. Alamoudi, Maha K. Alhobaishi, Naimah A. Alaqeel, Mohammed S. Alshahrani	2022	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) and Ensemble Models. Through these experiments, the prediction is done in this algorithm Random Forest gives the highest accuracy when compared to other methods.	94.16%

2	Time-to-event modelling for hospital length of stay prediction for covid – 19 patients	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	2022	This study uses a technique called time-to-event modelling which is also known as survival analysis. It uses algorithms like Logistic Regression, Random forests, Support Vector Machines and Decision tree-based methods. Survival analysis is a branch of statistics concerned with analysing time-to-event data and predicting the probability of the occurrence of an event. The event could be any format	70%
---	--	--	------	--	-----

3	Robust length of a stay prediction model for indoor patients	Ayesha Siddiq, Syed Abbas Zilqurnian Naqvi, Ahsan Naeem, Allah Ditta, Hani Alquahayz, Muhammad Adnan Khan	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. Here they use algorithms such as Ridge Regression(RR), Decision Tree Regression Extreme Gradient Boosting Regression (XGBR) and Random Forest Regression (RFR). The process like a Raw dataset is processed then exploring the data, Machine learning modelling, performance measuring and selection of robust model based on the performance.	92%
4	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 K-fold cross-validation. ML techniques used are Neural Networks(NN), Classification Tree(CT), Tree Baggies(TB), Random Forest(RF), Fuzzy Logic(FL), Support Vector Machine(SVM), KNN, Regression Tree(RT) and Naive Bayes(NB). Proposed techniques are data acquisition, data pre-processing, data transformation, training and testing	92%

5	Predicting inpatient length of stay at hospitals using python + bigdata	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. The algorithms used are Logistic Regression, Boosted Decision Tree and Random forest. In this, the APR DRGcode, a classification system that classifies patients according to the reason for admission, the severity of illness and the risk of mortality and the APR severity of illness score are the most important feature In predicting the patient's length of stay.	70%
---	---	-------------	------	---	-----