|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
|  | Predicting Hospital Readmission  UMRIT 25/09/2024Atul Prajapati |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Context:** You are tasked with predicting whether a patient is likely to be readmitted to the hospital within 30 days based on historical patient data.   1. Data Pre-processing (Preparing data for modelling)    * Importing necessary libraries and Loading the data    * Cleaning the data    * Handling missing and duplicated value    * Splitting data into “x” and “y” variables    * Getting all the data into “x” variable except the “readmitted” column    * “readmitted” column of the data store in “y” variable and encoded in binary numbers    * “x” variable divides in to two parts, 1. x\_cat and 2. x\_num    * x\_cat variables of the data needs to be converted in binary format using One\_Hot\_Encoding    * Once all of this is done, you are ready to go and you can start your modelling 2. Fit my logistic regression model    * Import the Scikit-learn for performing all these things stuffs    * Initializing the logistic regression model    * Fitting the model (X\_train, y\_train)    * intercept\_ gives us the Y-intercept of the regression line.    * coef\_ gives us the slope of the line for each independent variable.    * Using the fitting method of the model to train it on this data, and then access these attributes to understand the model parameters.    * Focusing on metrics for model’s accuracy    * Predict 3. Check on my model metrics    * Accuracy:    * For testing an accuracy of 0.60 means that 60% of the predictions made by the model were correct, which is generally considered as a descent model.    * For training an accuracy of 0.61 means that 61% of the predictions made by the model were correct, which is generally considered as a descent model.    * Precision: Of all the Positive my model predicted, how many were actually readmitted?    * For training we have 0.63 means that 63% patient were actually readmitted.    * For testing we have 0.61 means that 61% patient were actually readmitted.    * Recall: Of all the people that should have gotten the loan, how many did my model give to?    * For training 0.42 and for testing 0.41 means that 42%, 41% where my model correctly identified that much patient actually readmitted.    * Confusion Matrix    * F1 Score (A mixture of Precision and Recall) | | |
|  |  |  |