**Logistic Regression**

Logistic regression estimates the probability of an event occurring, such as voted or didn’t vote, based on a given dataset of independent variables. Since the outcome is a probability, the dependent variable is bounded between 0 and 1. It’s a supervised algorithm

Types of logistic regression

There are three types of logistic regression models, which are defined based on categorical response.

* **Binary logistic regression:**In this approach, the response or dependent variable is dichotomous in nature—i.e. it has only two possible outcomes (e.g. 0 or 1). Some popular examples of its use include predicting if an e-mail is spam or not spam or if a tumour is malignant or not malignant. Within logistic regression, this is the most commonly used approach, and more generally, it is one of the most common classifiers for binary classification.
* **Multinomial logistic regression:**In this type of logistic regression model, the dependent variable has three or more possible outcomes; however, these values have no specified order.  For example, movie studios want to predict what genre of film a moviegoer is likely to see to market films more effectively. A multinomial logistic regression model can help the studio to determine the strength of influence a person's age, gender, and dating status may have on the type of film that they prefer. The studio can then orient an advertising campaign of a specific movie toward a group of people likely to go see it.
* **Ordinal logistic regression:**This type of logistic regression model is leveraged when the response variable has three or more possible outcome, but in this case, these values do have a defined order. Examples of ordinal responses include grading scales from A to F or rating scales from 1 to 5.

**Adjusting thresholds**

https://machinelearningmastery.com/threshold-moving-for-imbalanced-classification/