Carlos J. Costa

REGRESSIONS

Regression

- Is a set of statistical processes for estimating the relationships among variables.

- Dependent variable,outcome variable, target

- Independent variables, predictor, covariates, or features

Regression

- simple regression/multivariate regression

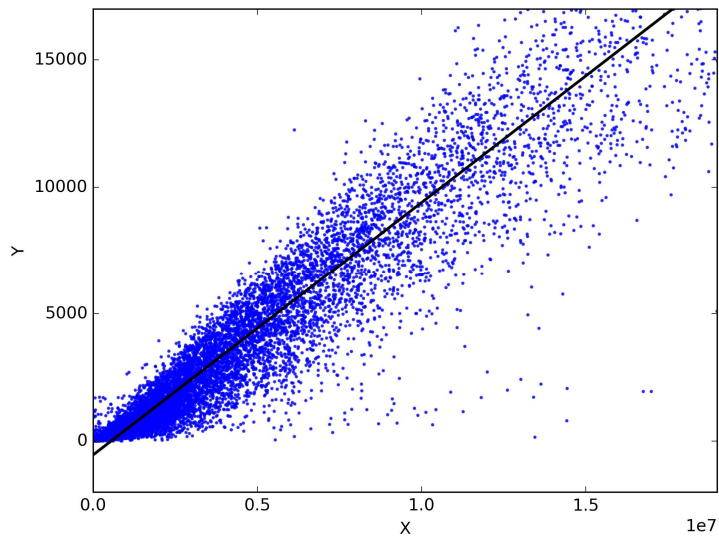$$Y_i = \beta_0 + \beta_1 X_i + e_i$$

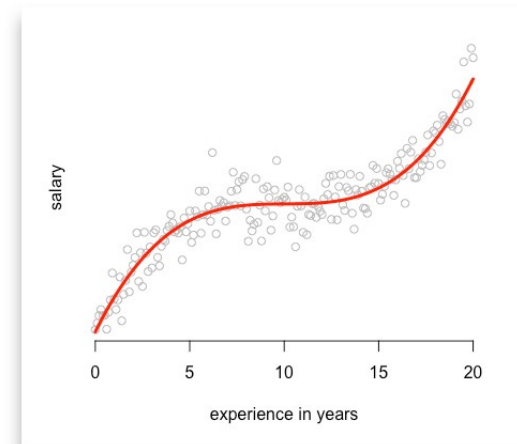$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + e_i.$$
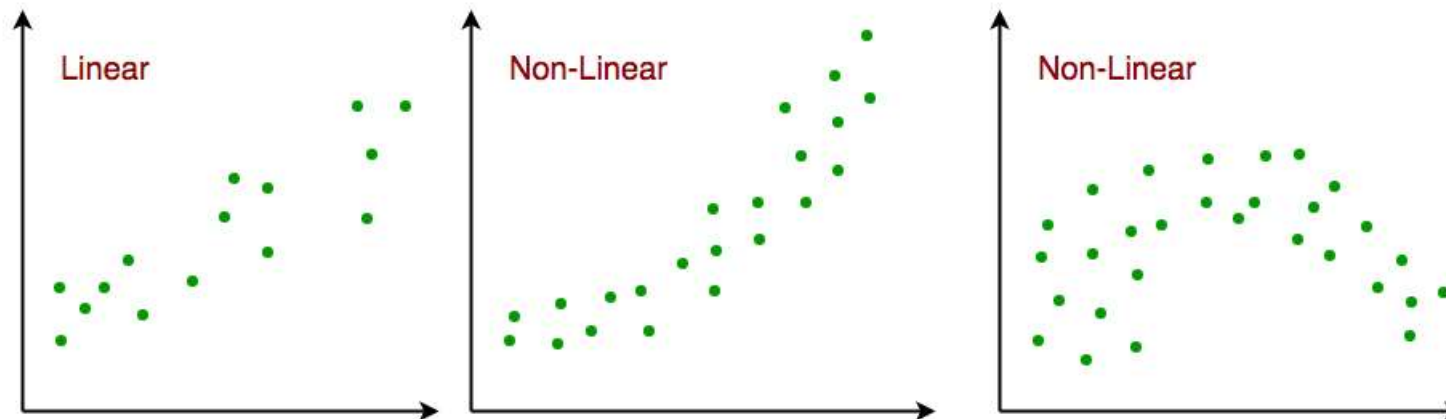
Regression

- .Linear/non linear

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i, \quad i = 1, \ldots, n.$$

$$y_i = \beta_0 + \beta_1 x_i + \beta_2 x_i^2 + \varepsilon_i, \ i = 1, \ldots, n.$$
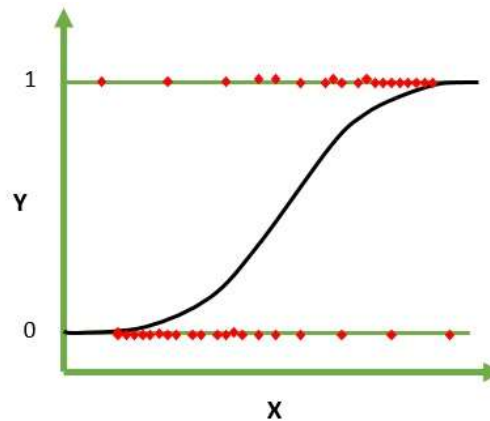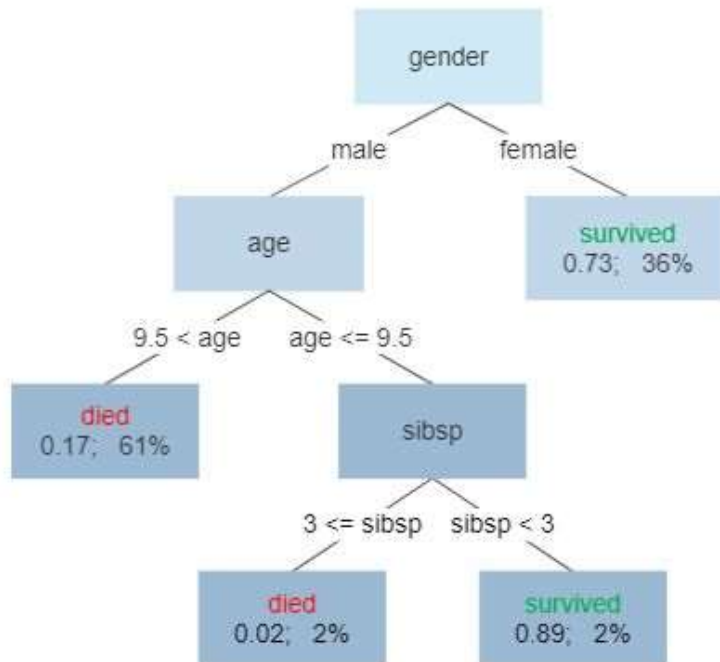
Regression

Logistics Regression

- A regression that having binary dependent variable

- in its basic form, uses a logistic function to model a binary dependent variable

Decision Tree

Survival of passengers on the Titanic

- Decision tree builds classification or regression models in the form of a tree structure.

- It breaks down a data set into smaller and smaller subsets while at the same time an associated decision tree is incrementally developed.

- The final result is a tree with decision nodes and leaf nodes.

Random Forest

- are an ensemble learning method for classification, regression and other tasks

- operates by constructing a multitude of decision trees at training time

- outputting the class that is the mode of the classes (classification) or mean prediction (regression) of the individual trees.