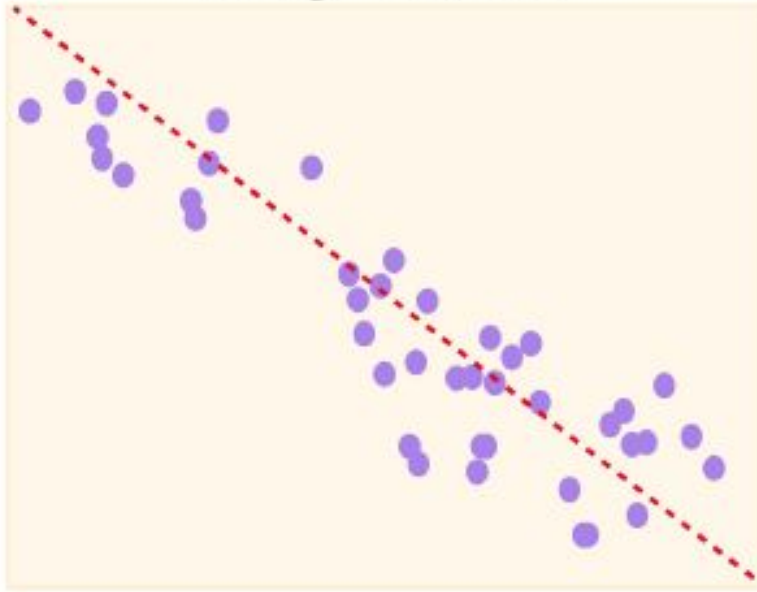
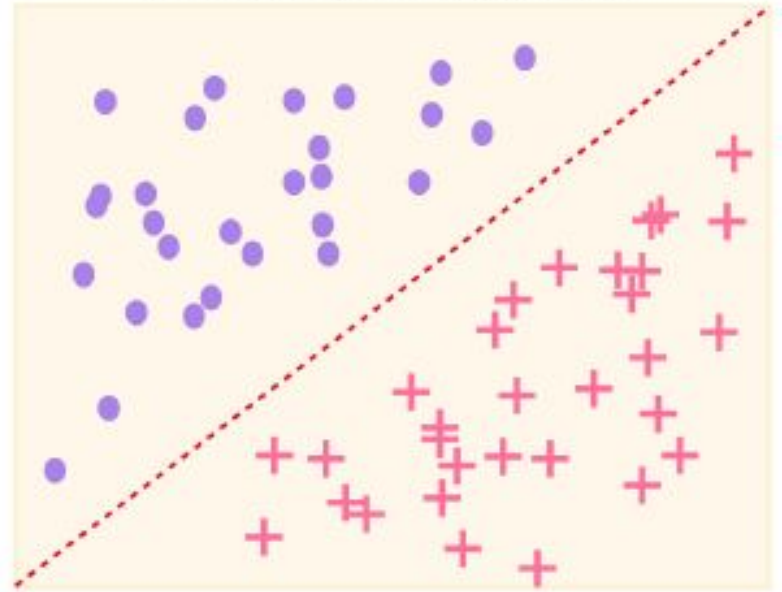


Regression



Classification

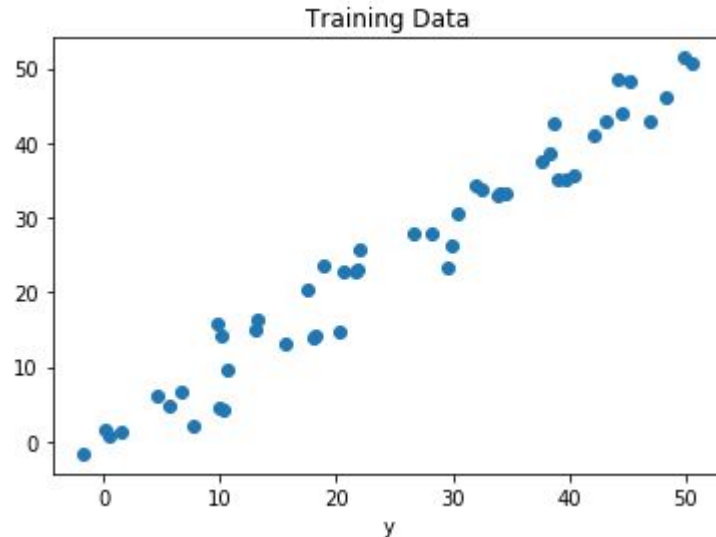


Classification vs Regression

PhD. Msc. David C. Baldears S.
PhD(s). Msc. Diego Lopez Bernal

Regression

Regression is the process of finding a **model** or function for distinguishing the data into **continuous real values** instead of using classes or discrete values. It can also identify the distribution movement depending on the historical data.

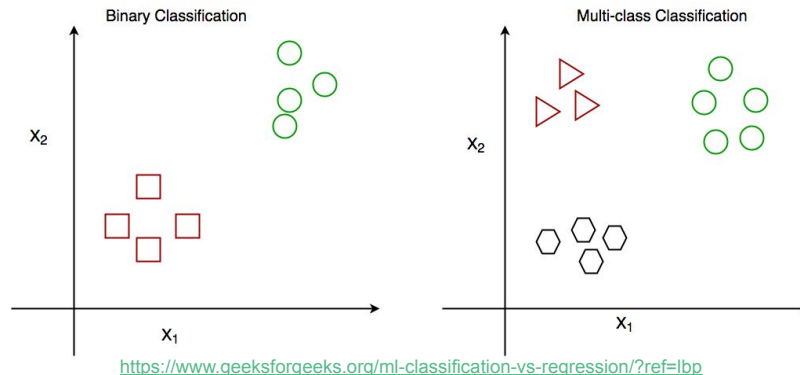


Regression of Day vs Rainfall (in mm)

Classification

Classification is the process of finding or discovering a **model** or function which helps in separating the data into multiple categorical classes i.e. **discrete values**.

In classification, data is categorized under different labels according to some parameters given in input and then the labels are predicted for the data.



Comparison between Classification and Regression

Parameter	CLASSIFICATION	REGRESSION
Basic	The mapping function is used for mapping values to predefined classes.	Mapping Function is used for the mapping of values to continuous output.
Involves prediction of	Discrete values	Continuous values
Nature of the predicted data	Unordered	Ordered
Method of calculation	by measuring accuracy	by measurement of root mean square error
Example Algorithms	Decision tree, logistic regression, etc.	Regression tree (Random forest), Linear regression, etc.

Types of Classification & Regression Algorithms

Classification:

- Logistic Regression
- K-Nearest Neighbours
- Support Vector Machines
- Kernel SVM
- Naïve Bayes
- Decision Tree Classification
- Random Forest Classification

Example:

- Spam detection
- Animal detection
- Object recognition

Regression:

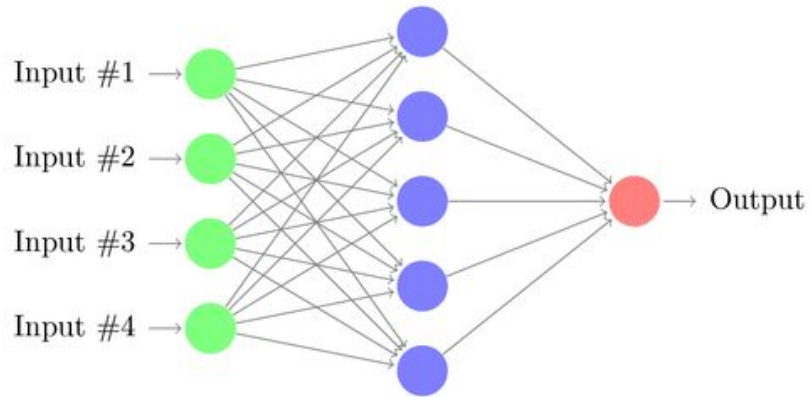
- Simple Linear Regression
- Multiple Linear Regression
- Polynomial Regression
- Support Vector Regression
- Decision Tree Regression
- Random Forest Regression

Example:

- Weather Forecasting
- Stock Market prediction
- Continuous Function Approximation

What about NN?

Neural Network for Regression



Neural Network for Classification

