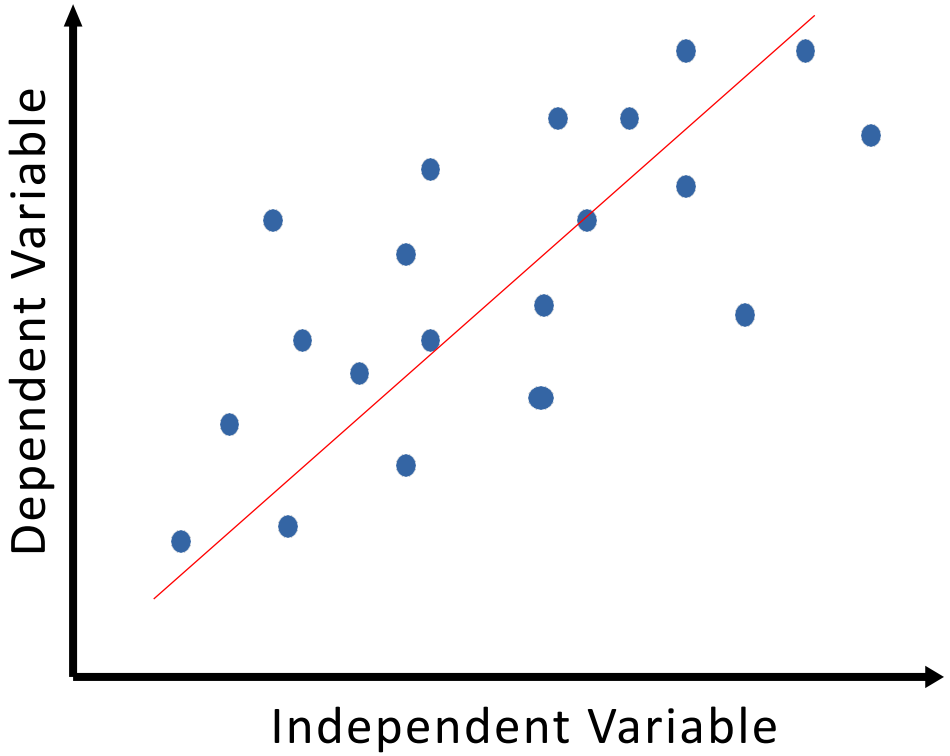
# Linear Regression



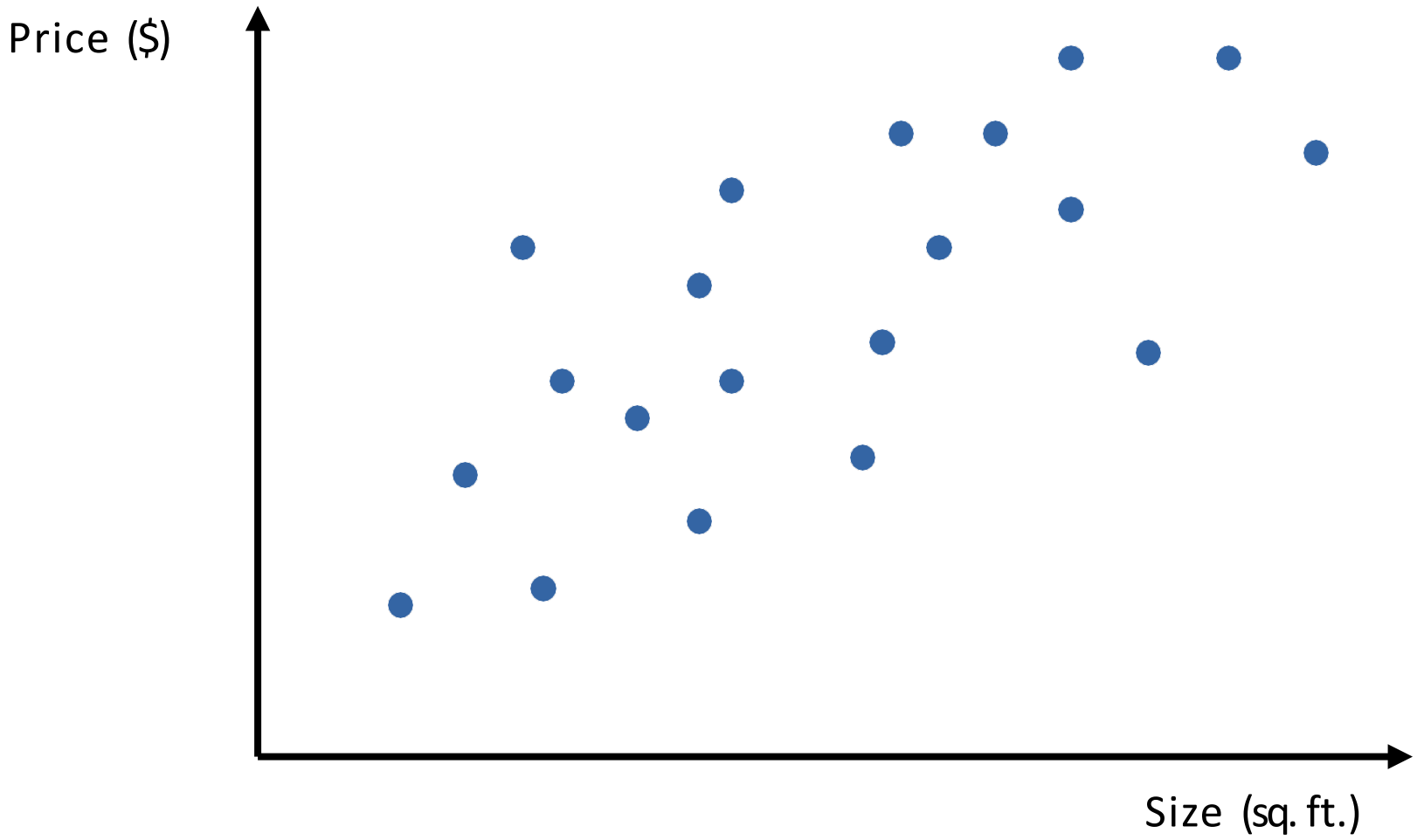
**Liner Regression:**

Linear regression is a statistical method used to model the relationship between a **dependent variable** and **one or more independent variables**. The goal of linear regression is to find **the linear equation that best fits the data**, and which can be used to **predict future values** of the dependent variable.

**Example: Predicting price of house**

Dependent Variable : Price of House
Independent Variable: Total Area, #Bed-Rooms, #Floors

**Plot:**



**Formal Definition:**

Input:

Output:

Parameters:

Regression:

Loss:

**Optimization:**

Loss: