



# non-parametric regression model for silence reduction in the field of image retrieval.

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## Introduction

This post shows some methods of parametric and non - parametric regression and parametric and non - parametric definition.

*in this program we will focus on non-parametric methods as they help us to study a sample of some images so that the KNN mechanism helps us in this field:*

### method non-Parametric:

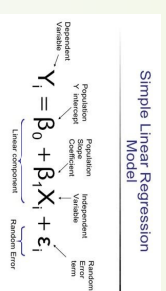
#### The simple linear regression model :

The simple linear regression model defines that each regression model for Y on X is given as follows:  $y = f(x) + \epsilon$

The linear model is used in statistics in different ways, the most common of which is the regression model, which is also used in time series analysis.

## regression analysis

regression analysis is a set of statistical processes for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables . More specifically, regression analysis helps one understand how the typical value of the dependent variable changes when any one of the independent variables is varied, while the other independent variables are held fixed.



parametric method and Non-parametric method

### 1/Parametric method :

Parametric go back to Fisher, 1920: estimate. number of parameters. Limitations of the approach: 1. simplistic models providing only an approximation of the reality.

2. very often asymptotic results .

### 2/Non-parametric methods:

In this field, we will focus on the study of the field of image retrieval on the parametric model because of the characteristics that help us in this study.

#### Nonparametric Regression Models

Appear as an Alternative which offers the Desired exhibitly in modeling (because no parametric hypothesis is not imposed in the model, only regularity hypotheses of the link function are taxed). The variable Explain is now related to the explanatory variable x through an unknown link function that must be estimated:  $y = f(x) + \epsilon$

## KNN Estimation

### What is Knn ?

K-Nearest Neighbors is a non-parametric method used for classification and regression ,It is a simple algorithm that stores all available.

How we can use the K-nn mechanism in the image retrieval process?

By using the KNN mechanism, we act as a set of images as random samples, Y and X are constant so that they represent two specific characteristics of the user. By this algorithm, we try to find any relationship between Y and X  $Y = f(x)$  by using the proximity approximation method that characterizes this. The application of this algorithm will be a program R- statistic.