

# Parametric vs Non-Parametric Models

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# Parametric vs Non-parametric algorithms

- Any machine learning algorithm that learns using pre-defined mapped function, is called **parametric**.
  - Parametric models have some strong assumption about the data.
  - $y = mx + c$
  - Examples: Linear Regression, Logistic Regression, Perceptron, Naïve Bayes
  - Advantages:
    - Simple
    - Fast
    - Less Data
  - Disadvantages:
    - Constrained
    - Limited Complexity
    - Poor Fit

# Parametric vs Non-Parametric Algorithms

- Any machine learning algorithm that do not make any assumption regarding the form of the mapping function is called **non-parametric**.
  - Examples: K nearest neighbors, Decision Trees, Non-linear SVM
  - Advantages:
    - Flexibility
    - Power
    - Performance
  - Disadvantages:
    - Requires more data
    - Slower
    - Overfitting