Introduction to Classification: Understanding the Basics

Classification is a machine learning technique that involves assigning a label or class to a given input data sample based on certain features or characteristics. It is a supervised learning task, which means that the model is trained on labeled data and learns to predict the class of an input sample by finding patterns and relationships in the training data.

There are several types of classification algorithms, including:

1. Binary Classification: This involves classifying an input sample into one of two classes, such as "spam" or "not spam" in the case of an email filtering system.
2. Multiclass Classification: This involves classifying an input sample into one of multiple classes, such as "dog", "cat", and "bird" in the case of an image classification system.
3. Logistic Regression: This is a linear model used for binary classification. It estimates the probability of an input sample belonging to a certain class using a logistic function.
4. Decision Trees: These are tree-like models used for classification and regression tasks. They make predictions by learning a series of simple decision rules based on the features of the input data.
5. Support Vector Machines (SVMs): These are linear models used for both classification and regression tasks. They find the hyperplane in the feature space that maximally separates the different classes.
6. K-Nearest Neighbors (KNN): This is a non-parametric method used for classification and regression. It makes predictions based on the class of the "k" nearest neighbors of an input sample.

7. Naive Bayes: This is a probabilistic classifier based on the Bayes theorem. It makes predictions based on the likelihood of an input sample belonging to a certain class given its features.

Summary:

Overall, classification is an important machine-learning technique used in many applications, including image and text classification, fraud detection, and medical diagnosis.

Happy Learning!!!

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For practical implementation visit my Github repository.

About the Author: I am Ambarish, A Data Science Enthusiast. I'm currently learning Machine Learning/Deep Learning/NLP/Computer Vision and If you have any questions please connect with me on my Linkedin profile.