Supervised learning: A beginner's guide

Supervised learning is a type of machine learning algorithm in which a model is trained on labelled data. This means that the data used to train the model includes both input features and corresponding output labels. The model is then able to make predictions on new data based on the patterns it learned from the training data.

One of the **key advantages of supervised learning** is that it allows the model to learn from the past in order to make more accurate predictions in the future. By providing the model with labelled training data, we can teach it to identify the underlying relationships between the input features and the corresponding outputs. This enables the model to generalize and make predictions on unseen data with a high degree of accuracy.

There are several different types of supervised learning algorithms, each with its own strengths and weaknesses. Some of the most ***common types of supervised learning algorithms include:***

- **Linear regression:** This algorithm is used to model the relationship between a dependent variable and one or more independent variables. It is commonly used in applications such as predicting the price of a stock or the sales of a product.

- **Logistic regression:** This algorithm is used to predict the probability of a binary outcome, such as whether an email is a spam or not. It is commonly used in classification tasks, where the goal is to assign a label to a given input.

- **Decision trees:** This algorithm is used to model the decision-making process. It works by dividing the training data into smaller and smaller subsets based on the values of the input features. This results in a tree-like structure, with each node representing a decision and each branch representing the possible outcomes of that decision.

- **Support vector machines:** This algorithm is used to find the best possible hyperplane that can be used to linearly separate the training data into different classes. It is commonly used in applications such as image classification and natural language processing.

- **Neural networks:** This algorithm is used to model complex nonlinear relationships between the input and output variables. It is composed of multiple layers of interconnected nodes, which process the input data and produce an output. Neural networks are commonly used in applications such as image recognition and speech recognition.

Summary

Overall, **Supervised learning is a powerful and widely-used approach to machine learning that can help us make more accurate predictions based on past data.** By providing labelled training data, we can teach the model to identify the underlying relationships between the input features and the corresponding outputs, enabling it to generalize and make predictions on unseen data.

Happy Learning!!!

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.