

most 3 popular algorithm used in machine learning until now?

Linear Regression:

Linear regression is a simple and widely used algorithm for supervised learning. It is used for predicting a continuous outcome variable (dependent variable) based on one or more predictor variables (independent variables) that have a linear relationship with the outcome.

Decision Trees:

Decision trees are versatile and intuitive algorithms used for both classification and regression tasks. They work by recursively splitting the dataset based on the most significant features, creating a tree-like structure of decisions. Popular variations include Random Forests and Gradient Boosted Trees.

Support Vector Machines (SVM):

SVM is a powerful algorithm for both classification and regression tasks. It works by finding the hyperplane that best separates different classes in a high-dimensional space. SVMs are effective in scenarios with complex decision boundaries and are particularly useful in image classification and text categorization.

How to transfer nonlinear equation to linear equation?

Linearization by Taylor Series Expansion:

If the nonlinear equation is not too complex, you can use a Taylor series expansion to linearize it. The idea is to approximate the nonlinear function with a linear function by considering only the first few terms of the Taylor series expansion.

Inverse Transformation:

If the nonlinear equation involves a reciprocal (inverse) relationship, you can often linearize it by taking the reciprocal of both sides.

Change of Variables:

Sometimes a change of variables can transform a nonlinear equation into a linear one. This involves introducing a new variable or transforming existing variables in a way that simplifies the equation.

Substitution:

Introducing new variables or substituting existing variables with new expressions can sometimes lead to linear equations.