

What is the purpose of a ROC curve?

A Receiver Operator Characteristic (ROC) curve is a graphical plot used to show the diagnostic ability of binary classifiers. It was first used in signal detection theory but is now used in many other areas such as medicine, radiology, natural hazards and machine learning.

How ROC curve used in evaluating the performance of a binary classification model?

ROC curves are graphs that plot a model's false-positive rate against its true-positive rate across a range of classification thresholds; that is, across various cutoffs used to split real-valued model outputs (such as probabilities) into binary predictions of "Yes"/1/"Success"/etc. and "No"/0/"Failure"/etc.

How does the concept of feature scaling contribute to the training of machine learning models?

Feature scaling is the process of normalizing the range of features in a dataset. Real-world datasets often contain features that are varying in degrees of magnitude, range, and units. Therefore, in order for machine learning models to interpret these features on the same scale, we need to perform feature scaling.