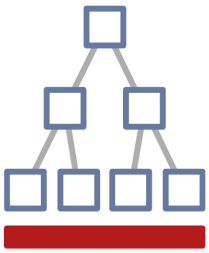
# Module Introduction: Create Decision Trees



Classification and regression tree (CART) algorithms recursively split the data into partitions. You can keep track of these partitions in a tree structure. During inference, a validation/test point traverses the tree until it falls into a leaf. Each leaf is associated with one of the data partitions, and you assign the validation/test point the most common label within that partition (or the average label in the case of regression.)

Professor Weinberger explains the conceptual and mathematical underpinnings of the CART algorithm. You will investigate how to partition the data into a tree that minimizes training error. You will also explore techniques to avoid overfitting and underfitting to the training data to improve your models' generalization accuracy.

In this module, you will have the opportunity to create your own regression tree.