

SAAS CX Homework 10

JONATHAN PAN AND MICHAEL WANG

Spring 2022

§1 Decision Trees

Problem 1.1. How do we determine whether a split in a decision tree is good or not?

Problem 1.2. How does our decision tree model determine which splits to make? Hint: brute force

§2 Ensemble Learning

Problem 2.1. In random forests, it is important to select a random subset of features to only consider before deciding each new split when we create a decision tree. Why do we need to do this?

§3 k-Nearest Neighbors

Problem 3.1. For each value of k , interpret what the k-NN is doing and how high or low the bias and variance will be:

- $k = 1$
- $k = N$