Tania Soutonglang

CS 422-01

Sept. 29, 2022

<div align="center">Homework 3</div>

1.
    a. How many levels are there in the decision tree?
       There are 3 levels in this decision tree.
    b. What is the default class label associated with each vertex?
       Level 1, Vertex 1: Default class label is setosa
       Level 2, Vertex 2: Default class label is setosa
       Level 2, Vertex 3: Default class label is versicolor
       Level 3, Vertex 4: Default class label is versicolor
       Level 3, Vertex 5: Default class label is virginica
    c. Starting from the root note, what is the name of the first attribute used for a decision, and what are the split points?
       Level 1, split on attribute: Petal.Length
       Split points: < 2.45 left subtree, ≥ 2.45 right subtree

       Level 2, split on attribute: Petal. Width
       Split Points: < 0.8 left subtree, ≥ 0.8 right subtree
    d. Each vertex has three lines.
        i. At each vertex, what do the three numbers in the middle line signify?
           The three numbers in the middle represented the probability of each flower species being in that vertex.
        ii. At each vertex, what does the last line signify?
           The last line signifies the amount of data that is in that vertex from the original dataframe.