

Exercise Sheet 3: Cluster Analysis

Computer Problems:

The iris data published by Fisher (1936) have been widely used for examples in discriminant analysis and cluster analysis. The sepal length, sepal width, petal length, and petal width are measured in millimeters on 50 iris specimens from each of three species, *Iris setosa*, *I. versicolor*, and *I. virginica*.

1. Hierarchical clustering
 - (a) Use Ward's method to cluster the data set and interpret the results.
 - (b) Use the method average to cluster the data set and interpret the results.
 - (c) Use the method complete to cluster the data set and interpret the results.
 - (d) Use the method single to cluster the data set and interpret the results.
2.
 - (a) Use k -means clustering to cluster the iris data.
 - (b) Illustrate the results graphically.