Homework 8

Due June 9th, 2019 by 11:59pm

Instructions: Upload your answers to the questions below to Canvas. Submit the answers to the questions in a PDF file and your code in a (single) separate file. Be sure to comment your code to indicate which lines of your code correspond to which question part.

This is an optional homework assignment if you wish to explore further topics. You may choose to tackle on one or several exercises. No hint through Canvas discussion board will be provided. No solution of this homework assignment will be provided.

1 Exercise 1

Read Sec. 14.5.3 and Sec. 14.5.4 in Ch. 14 of "The Elements of Statistical Learning". Code your own spectral clustering algorithm using the Gaussian RBF kernel. Reproduce (the relevant sub-figures of) Figure 14.29.

2 Exercise 2

Read Sec. 14.5.3 and Sec. 14.5.4 in Ch. 14 of "The Elements of Statistical Learning". Code your own kernel principal component analysis algorithm using the Gaussian RBF kernel. Reproduce (the relevant sub-figures of) Figure 14.30.

3 Exercise 3

Read Sec. 9.1 and Sec. 9.4 in Ch. 9 of "The Elements of Statistical Learning". Code your own local scoring algorithm for additive logistic regression. Reproduce (the relevant sub-figures of) Figure 9.1.