NTUST, CSIE
Machine Learning (CS5087701), Fall 2018

Homework 3 (6pts)

Due date: Nov. 20

Question 2.1. [6pts] The same question from homework 2 again, but by Artificial Neural Networks. A little more focus should be on:

(a) What kind of network structures you have, especially the number of hidden layers and the number of hidden nodes in each hidden layer?

(b) Will you obtain different model accuracy if you modify the network structures as described in (a)?

(c) How will you comment on using different number of attributes in the ANN modeling? That is, will we obtain very bad result if we have a huge set of attributes?

(d) How to avoid overfitting in your ANN modeling? Showing some concrete examples is encouraged.

(e) The result and discussion from both decision trees and ANN can be combined if you want to compare between the two.

(f) The page size is similar to homework 2.

(g) (Bonus) Can you suggest any approach where we can try to explain the ANN model that we have for either of the two datasets? That is, instead of considering ANN as a black-box model, we can attempt to "read" some information or extract some knowledge from a given ANN.