

Assignment 9

Learning Objectives:

1. Practice doing optimization.

Description:

The data set you will be working with for this assignment is the CPU dataset that comes with Weka. The purpose of this assignment is to practice doing optimization. You can use the same train/test pairs included with the assignment.

Step-by-Step Guide:

You should optimize two different algorithms. One of those algorithms will be locally weighted learning (LWL) with Linear Regression as the base classifier. The other one you can choose yourself, although it must be a numeric prediction algorithm, and it must be an algorithm with at least one parameter that needs tuning. Your answers to the following questions must clearly demonstrate your understanding of the concepts we have discussed in class. It must be possible to verify that you have observed proper methodology.

(1) What is your baseline performance for each algorithm using default settings?

(2) For each algorithm, describe your optimization procedure and results using the prompts below as a guide.

Algorithm 1:

Stage 1: What setting did you determine you would use to build your model and why?

Stage 3: What do you estimate will be that model's performance on a new set of data?

			Optimal Setting	Test set performance

Average =

Algorithm 2:

Stage 1: What setting did you determine you would use to build your model and why?

Stage 3: What do you estimate will be that model's performance on a new set of data?

			Optimal Setting	Test set performance

Average =

(3) Based on your results, was it worth it to do the optimization? Or should you just use default settings? How did you make that determination?

Deliverables: Your write up for the questions above.