Reading Questions

Econ 224

Fall 2018

Instructions

This document lists the all of the reading assignments for Econ 224 along with the associated reading questions. For each reading assignment there will be an in-class quiz. The dates of these quizzes are listed below. Quiz questions will be randomly selected from the reading questions listed on this document, so if you thoroughly prepare your answers in advance, you will be sure to get 100% on each quiz of the semester. The abbreviation *ISL* refers to "An Introduction to Statistical Learning" by James et al. while *MM* refers to "Mastering 'Metrics" by Angrist and Pischke.

Quiz #1: Thursday, August 30th – ISL 2

1. We use Y to denote the variable we want to predict and X to denote a variable used to predict Y. List the different names that ISL uses interchangeably for Y. Do the same for X.
2. Define reducible and irreducible error. Which of these errors do the authors of ISL say that their book is focused on minimizing?
3. What is a parametric method? In particular, what are the two steps involved in using a parametric method? Give an example.
4. Contrast parametric and nonparametric methods. What is the main advantage and disadvantage of each?
5. What is the difference between supervised and unsupervised learning?
6. What is the difference between regression and classification?
7. Explain the difference between *training* MSE and *test* MSE. Which of these do we want our statistical learning method to minimize?
8. Define bias and variance. How would we expect each of these quantities to change as we increase the flexibility of our statistical learning model?
9. In place of MSE, what measure of prediction accuracy is used in classification problems?
10. What is a Bayes classifier?
11. Is it possible for a statistical learning model to attain an error rate *lower* than the Bayes error rate? Why or why not?
12. Briefly explain the K-nearest Neighbors classifier. What trade-off involved in choosing a value of K?

Quiz #2: Tuesday, September 4th – MM Intro & 1.1

1. Define the term *ceteris paribus*

Quiz #3: Thursday, September 6th – MM 1.2 & Appendix

Quiz #4: Tuesday, September 11th – ISL 3.1-3.2

Quiz #5: Thursday, September 13th – ISL 3.3-3.5

Quiz #6: Tuesday, September 18th – MM 2.1-2.2

Quiz #7: Thursday, September 20th – MM 2.3 & Appendix