Intro to Machine Learning
Take-home problems

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Due: Aug 4 at 10pm (CT)

The problems below are to be completed and submitted by the due date above. While you are free to discuss the problems with each other, the TA, or me, **your work must be your own**. So, for example, if you need a reminder about what an arugment to an R function does, it's OK to ask someone for a pointer to an example, or to help you debug your code. It's not OK to just copy another student's code. As a rule of thumb: If you and I sit down to look at the code you wrote, you ought to be able to tell me line-by-line what's happening and why.

1. R and exploratory data analysis: Chapter 2: #10

2. Linear Models: Chapter 3: #15

3. Shrinkage and selection in linear models: Chapter 6: #11

4. Regression Trees: Chapter 8: #8 **BUT:** Use the Austin housing data posted to the course website (austinhousing.csv) instead of the dataset in the book. Use the following variables to generate predictions for `log(latestPrice)`: `latitude, longitude, hasAssociation, livingAreaSqFt, numOfBathrooms, numOfBedrooms`. (See the description of the dataset in the individual prediciton project assignment.) When reporting your prediction errors, report them in terms of prices (not log prices).

5. Classification (Trees and Logistic regression):   Chapter 8: #11; in part c) use logistic regression.

6. Neural Nets: Chapter 10: #7