22s:152 Applied Linear Regression

Final Exam

• Friday, December 21st, 7:30am-9:30am in the Old Capital Mall classroom.
• It will be comprehensive.
• You can use both sides of two - 8.5”x11” pieces of paper for notes.
• I expect to have a number of scenarios with R output from which you should be able to read results and answer questions.
• There will also be some short answer.
• I should have a better idea by the end of next week on the form of the test.
• The three midterms will be a good study tool.

• Topics since Exam 3:
  1. Weighted least squares
     - Recognize when you would use it.
  2. AR(1)
     - Recognize when you would use it.
     - Recognize time correlation in resid plots.
     - Lag plot.
     - Durbin-Watson test & output.
     - R output from fit of AR(1).
  3. Bootstrap
     - When is it used?
     - General concept behind the procedure.
  4. Cross-Validation
     - What it’s used for.
  5. Polynomial Regression
     - When it’s used.
     - Centering of x-values, it’s impact.
  6. Lowess scatterplot smoothing
     - General idea behind the fit.

• Topics from earlier:
  1. Simple linear regression
  2. Multiple regression
  3. Dummy variables
  4. Multicollinearity in multiple regression
  5. One-way ANOVA
  6. Two-way ANOVA
  7. Diagnostics I & II
     - outliers: leverage, studentized residuals
     - influence
     - checking assumptions
  8. Logistic regression
  9. Poisson regression