STAT 485/685 Lecture 11
Fall 2017
16 October 2017

- I discussed the midterm.
- You may bring a calculator and two sheets of notes.
- The notes may be handwritten *or* printed; you may use both sides of both sheets of paper; US letter paper, to be clear.
- You *may not* use your phone for a calculator.
- The room will be crowded so you will likely need to leave other stuff somewhere else.
- I made a list of things which you should know
  - Rules for computing means, variances, covariances as on the handwritten notes.
  - What stationarity means; the two different kinds (strong vs weak).
  - Example processes: recognize white noise, AR(p), MA(q), and ARMA(p, q).
  - Autocorrelation and autocovariance functions in general and for the above in particular.
  - Yule-Walker equations for an AR(1) or maybe even an AR(2).
  - Conditions for an AR(1) or an AR(2) to be stationary.
  - Estimating and removing trends: seasonal, linear, quadratic, harmonic; how to use `lm` for this; how to interpret output.
  - Tests for independence: runs test, output, interpretation.
  - Residual plots: looking for outliers, skewness, non-normality. Looking at the acf of the residuals.
- Then I talked about the kinds of questions:
- I describe a potential real world time series and ask: likely to be stationary? Explain. Use full sentences.
- I plot series and ask if they look stationary and what other plots you might look at to check. I expect explanations in full sentences.
- I do some `R` fitting of trends, show output and graphs of residuals etc. Ask you to discuss plots, interpret qq plots, runs test.
- You compute means, variances and covariances and say what kind of process.
- Handwritten slides.