ECONOMETRICS IV
ECON 722
SPRING 2018

Course Instructor: Francis DiTraglia

Office: MCNB 535

Office Hours: M 2–4pm

Lecture Time and Location: TR 1:30–3PM MCNB 169

Course Website: http://ditraglia.com/econ722

Course Description: Talk about how this is a little different from the regular Econ 722 since it's only a half course. Still relevant for macroeconometrics and time series but will also consider some cross-section applications. Broaden appeal. Applied microeconomics students who are interested in understanding some of the techniques related to "big data" will find the course helpful.

Prerequisites: The prerequisites for this course are Econ 705 and 706 or equivalent graduate level econometrics.

Recommended Text: Mostly articles and other references that I will post online. Comprehensive reference for much of the machine learning material is Murphy, Kevin (2012): *Machine Learning: A Probabilistic Perspective*

Assignments and Grading

Grades for this course will be determined based on. . .

Overall Score = $(30\% \times \text{Quizzes}) + (20\% \times \text{Midterm 1}) + (20\% \times \text{Midterm 2}) + (30\% \times \text{Final})$.

You can earn extra credit worth up to 5% of your course grade: see "Extra Credit" for details.

Econometrics Workshop:

TUESDAY	THURSDAY
Mar 13th **1** Computing for Econometrics: Creating R Packages, Rcpp, Parallel R	15th **2** Model Selection I: AIC, TIC, Corrected AIC
20th **3** Model Selection II: Mallow's C_p, Cross-validation, Examples	22nd **4** Model Selection III: Focused Info. Criterion, Asymptotic Properties
27th **5** Moment Selection I: Consistent Moment Selection, Andrews (1999) etc.	29th **6** Moment Selection II: Focused Moment Selection and Averaging, Inference
Apr 3rd **7** High-Dimensional Regression I: James-Stein, Ridge Regression, PCR	5th **8** High-Dimensional Regression II: LASSO
10th **9** Factor Models I: Factor Analysis vs. PCA, High-dimensional Factor Models	12th **10** Factor Models II: Diffusion Index Forecasting, Factor Choice, Factors as IVs
17th **11** Additional Topics I (Time Permitting)	19th **12** Additional Topics II (Time Permitting)
24th **13** Additional Topics III (Time Permitting)	26th **Reading Day – No Lecture**