

STATS 579

Data Analysis Practicum

BASIC COURSE INFORMATION

Course:	STATS 477/577	SMLC 352	TuTh	2:00–3:15pm
Instructor:	Fletcher Christensen	Assistant Professor of Statistics		
Contact:	ronald@stat.unm.edu	http://www.stat.unm.edu/~ronald/		
Office Hrs:	SMLC 328	Mo 2–3	Tu 3:30–4:30	Th 3:30–4:30
Website:	http://www.stat.unm.edu/~ronald/DataPracticum.html			
Prerequisites:	STAT 540 (Regression), STAT 545 (ANOVA), STAT 561 (Probability), and STAT 553 (Inference)			

COURSE SUMMARY

This course is a data analysis practicum, intended for graduate students in statistics who already have a comprehensive background probability, inference, and linear modeling. Our focus for this semester will be on applying the techniques you’ve learned in graduate school to a single real-world data analysis problem. This semester, we will be considering data on Russian twitter messages from the time of the 2016 US presidential election.

TEXTS AND TOOLS

There is no formal textbook for this class, since each student will be expected to self-direct their learning of new methods based on their choice of projects. The following book is suggested to interested students, however, since it recounts an advanced analysis of text data and may help students come up with ideas for their projects.

Suggested: *Applied Bayesian and Classical Inference: The Case of the Federalist Papers*
Mosteller & Wallace, 1984

The data set you’ll work with in this project is the Russian Troll Tweet dataset collected by Drs. Linvill & Warren at Clemson University and published online by the website FiveThirtyEight.

Dataset: <https://github.com/fivethirtyeight/russian-troll-tweets/>
Writeups: <https://fivethirtyeight.com/features/why-were-sharing-3-million-russian-troll-tweets/>
http://pwarren.people.clemson.edu/Linvill_Warren_TrollFactory.pdf

ASSESSMENT

Assessment for this class will be based entirely on your individual data analysis project, which you will formulate and conduct over the course of the semester. Although you will only have the one project to work on throughout the semester, I will ask you for deliverables in the form of progress reports twice during the semester before you turn in your final project. You will also be expected to present your findings to the class.

1. Progress Report 1 (20%)

Your first progress report will combine exploratory data analysis and hypothesis generation. At this stage, you are deciding on the research project you would like to conduct with these data and identifying the approaches you will need to use in your analysis.

2. Progress Report 2 (20%)

Your second progress report will focus on the technical details of your data analysis. This report will include how well the approaches you identified in your first progress report have fared in your analysis, what outside resources you've considered to understand how your work fits into the larger body of scientific research, and what complications you've identified for applying the techniques you've learned to this dataset.

3. Class Presentation (20%)

You will be expected to give the class a 10-20 minute presentation on your findings at the end of the semester.

4. Final Project Report (40%)

You will submit a final report about your data analysis project at the end of the semester. This will be structured like an academic paper, where you will introduce your chosen problem, discuss the methods you used to address that problem statistically, report the results of your analysis, and discuss how that analysis fits into the larger body of scientific research. Your final project reports will be due by **Friday, May 10th at 11:59pm**.

POLICIES AND EXPECTATIONS

Students with disabilities:

In accordance with University Policy 2310 and the American Disabilities Act (ADA), students who need academic accommodations and/or assistance in emergency evacuations should contact me as soon as possible to ensure their needs are met in a timely manner.

Academic misconduct:

For the purposes of this class, academic misconduct is defined as submitting someone else's work and pretending it's your own. More detail on academic misconduct is provided by the Dean of Students' (<https://dos.unm.edu/images/dean-of-students-academic-integrity-guidelines.pdf>) and in the UNM Student Code of Conduct (<http://pathfinder.unm.edu/code-of-conduct.html>).

Don't do it.