Statistical Computing with R

Professor Nancy Zhang

The goal of this course is to introduce students to the R programming language and related ecosystem. This course will provide a skill-set that is in demand in both the research and business environments. In addition, R is a platform that is used and required in other advanced classes taught at Wharton, so that this class will prepare students for these higher level classes and electives.

Materials:

> There are no textbooks for this course.
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> Lecture slides and other notes are in Files/Notes
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> R code introduced in lectures are in Files/Rscripts

Assignments and Grading:

> 4 homeworks, all homeworks are graded and have equal weight. Homeworks will be posted online each Wednesday (starting 9/7), and due the following Wednesday at midnight (technically the following Thursday 12AM). Homeworks are submitted and graded online. Final grade is based on HW1+HW2+HW3+HW4+2*(Final Project).
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> You are encouraged to work together on the homeworks, but each student must submit independently written solutions.

Lecture Plan:

Lec. #	Date	Topics
1	31-Aug	What is R? Rstudio, help functionality, first look: data types, simple operations
2	7-Sep	Data structures: vectors, matrices, arrays, lists; subsetting, slicing and dicing
3	12-Sep	Dataframes, reading data into R, tables and sorting
4	14-Sep	More on data frames: combining data from different sources. Basic analytics in R.
5	19-Sep	Writing functions in R
6	21-Sep	Writing functions in R
7	26-Sep	Logic and flow control structures: if, for, and while
8	28-Sep	Case Study I
9	3-Oct	More complex simulations and working with distributions
10	5-Oct	Case Study II
11	10-Oct	The R Ecosystem: working with packages
12	12-Oct	Graphics in R
13	17-Oct	Repoducible research, markdown languages
14	19-Oct	TBA