Practical Statistics for Data Scientists with R and Python Course Syllabus

Overview

In this course, students will learn to use R and Python to perform basic to advanced statistical analysis. The goal of this course is to provide students the knowledge and toolkit needed to succeed in a data science career.

Students will use a variety of resources to learn the material. Upon completion of the course, students will be able to pursue a data science career (e.g. data analysts, business analysts, etc.).

Objectives

This course will cover the following material. Students are expected to master these tools and skills:

- Basics of R and Python programming
- Statistics basics, theorems, and models
- Statistical machine learning methods

Material

Practical Statistics for Data Scientists is the primary textbook of this course. We will also use external resources including but not limited to Stack Overflow, Kaggle, GitHub, and YouTube to learn the material.

Deliverables

- **Assignments**
  This is a hands-on learning experience. Students are expected to actively engage with the course material through completing assignments, which may include essays, worksheets, and programming exercises. These assignments will be graded and used to assess the learning outcome. The assignments are designed to help students practise the material and achieve the course objectives.

- **Projects**
  There are a few projects for students to integrate and apply the knowledge and tools learned from this course. These projects are also graded items and will be used to assess the learning outcome of students. Just as the assignments, students are expected to complete all projects to achieve the course objectives.

Deliverables are due in the designated dropboxes under https://github.com/mrlizhaozhi/practical-statistics-for-data-scientists-with-r-and-python/. Students are expected to work independently when cooperation is not permitted; submit assignments and projects in full on time, and review feedback on returned submissions.

Resources

The following resources should help students with learning the material:

Title	Link	Type	Comments
R Bloggers	www.r-bloggers.com	Blog	
Marin Stats Lectures	www. statslectures.com	Video	
StatQuest with Josh Starmer	https://www.youtube.com/user/joshstarmer	Video	
Introduction to R for Undergraduates	https://web.stanford.edu/~kjytay/courses/stats32-aut2019/	Lectures	
Simply Statistics	https://simplystatistics.org	Blog	

Course Schedule

Please refer to the Excel file titled “Course Schedule” for details about how this course is planned.