MATH 484-564 Section 2
Section Syllabus (August 14th Version)
Regression

Instructor: Dr Kiah Wah Ong
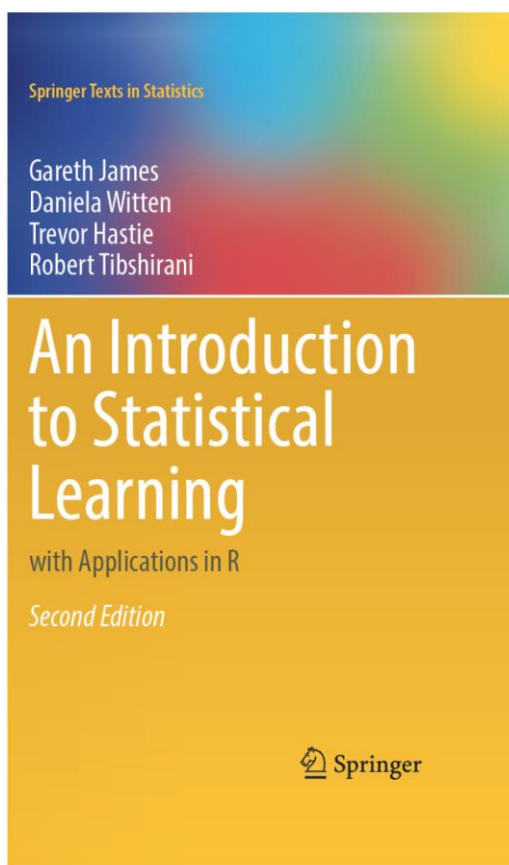Email: kong2@iit.edu
Office: RE 220
Kiah's office hours: TBD

TA/Grader name: TBD
Email: TBA
TA Office hours: TBD

This class will be in-person. The class will have NO recording; however, lecture notes are available.

1. **Textbook,** you can get it for free legally at
   https://www.statlearning.com/

Lecture notes will be provided on Canvas.

2. Assessments and Grades

Assessments: Grading:

Homework	25%		A	90-100	Excellent
Midterm	25%		B	74-89	Above Average
Project	20%		C	60-73	Average
Final Exam	30%		D	50-59	Below Average
			E	0-49	Fail

3. Topics

- Introduction
    - i.   What is Statistical Learning?
    - ii. Assessing Model Accuracy
    - iii. Introduction to R

- Linear regression
    - i.   Simple Linear regression
    - ii. Multiple Linear regression
    - iii. Other Considerations in the Regression Model

- Classification
    - i.   An Overview of Classification
    - ii. Why Not Linear Regression?
    - iii. Logistic Regression
    - iv. Generalized Linear Models

- Resampling Methods
    - i.   Cross Validation

- Linear Model Selection and Regularization
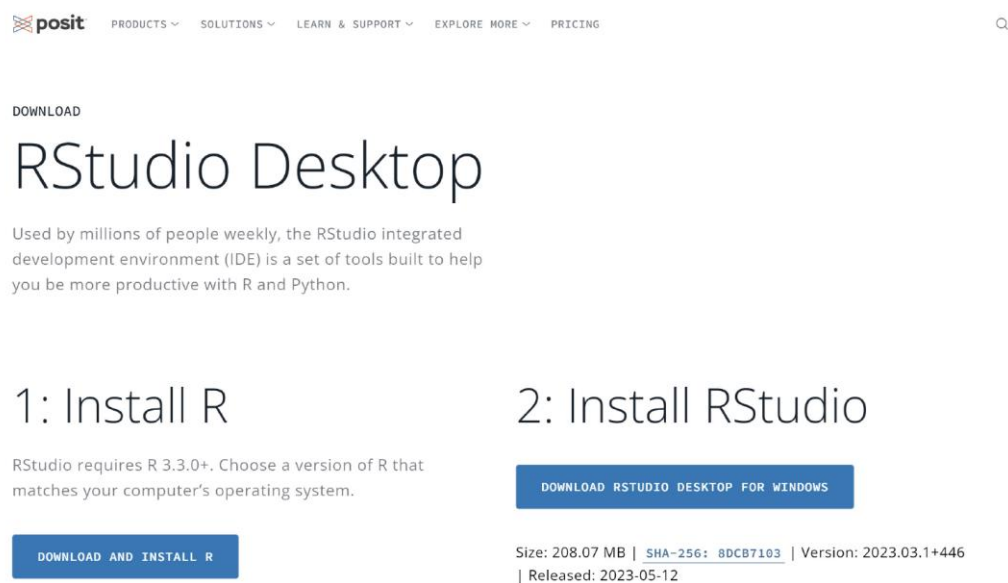   - i.   Subset Selection
    - ii. Shrinkage Methods

4. **Computational tool, R**

   We will be using R for this class as a computational tool. Please install the software using the link below.

Installation of R and RStudio

Go to
https://www.rstudio.com/products/rstudio/download/

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DOWNLOAD

RStudio Desktop

Used by millions of people weekly, the RStudio integrated development environment (IDE) is a set of tools built to help you be more productive with R and Python.

1: Install R

RStudio requires R 3.3.0+. Choose a version of R that matches your computer's operating system.

[DOWNLOAD AND INSTALL R]

2: Install RStudio

[DOWNLOAD RSTUDIO DESKTOP FOR WINDOWS]

Size: 208.07 MB | SHA-256: 8DCB7103 | Version: 2023.03.1+446 | Released: 2023-05-12

5. **Course Project**

   The project information will be provided in a separate document later in the semester.

6. Academic Integrity:

Department of Applied Mathematics takes academic integrity very seriously. The usual penalty for a student caught cheating includes an E in the course. Further penalties may include probation, suspension, or expulsion from the university.

7. Disability assistance:

Reasonable accommodations will be made for students with documented disabilities. In order to receive accommodations, students must obtain a letter of accommodation from the Center for Disability Resources and make an appointment to speak with me as soon as possible.

8. AI Tools Policy:

MATH 484-564 is not a coding-focused course, and you are welcome to use AI tools to assist with generating code for analysis. However, for homework and projects, you should avoid using AI tools for interpreting results. Currently, these tools may produce inaccurate or nonsensical interpretations.