

课程信息

This is the course **Data Visualization**.

The course is regularly given on each Thursday from Week 1 to 16, ending with reports in December, 2021 or early January, 2023. There will be a 1.5-hour lecture from 6:00pm to 7:40pm on.

授课教师

Xin Liu, Associate Professor at School of Statistics and Management, SUFE. More info on <https://github.com/BearLovesBadminton/Homepage> (<https://github.com/BearLovesBadminton/Homepage>)

Office Hour: Tuesday afternoon or by appointment.

内容范围

0. Brief Review of **R** and **R Studio**.

1. Brief Guide to **R Markdown** and **R Sweave**.

2. Data Cleaning with **tidyverse**, **haven** and other useful packages.

3. Data Visualization:

- 3.1 Summarizing Data with **Group by** and **dplyr**;
- 3.2 Producing figures with **plot** and other basic plot R functions;
- 3.3 Producing figures with **ggplot** and **ggplot2**;
- 3.4 Presenting literal and numerical results with **R Markdown** and **R Sweave**;
- 3.5 Introduction to **R Shiny**;

4. Useful Models and Visualization:

- 4.1 Regression Models
- 4.2 Variants of Regression Models (Logistic Regression)
- 4.3 Classification Methods
- 4.4 Semi-/Unsupervised Methods
- ...

5. Build your own website interactive with a scientific project and report it with **R Shiny**.

课程考核

- 1. 作业和实验 (Course Assignment) : $15\% * 3 = 45\%$
- 2. 期末课题 (Final Project) : 45-50%
- 3. 课堂参与 (Participation) : 5-10%

期末课题数据来源:

- 1. 金融和经济数据
- 2. 环境科学数据
- 3. 脑科学数据
- 4. 物理数据

- 5. 生物数据
- 6. 交通数据
- 7. ...

Some useful data sources:

- 1. KEEL dataset Repository
- 2. Kaggle dataset Repository
- 3. ...

参考书目和材料

- 1. Book: **R for Data Science**
- 2. Book: **数据之美**
- 3. Online book: <https://bookdown.org/yihui/rmarkdown/> (<https://bookdown.org/yihui/rmarkdown/>)