BSAN 750
Data Mining and Machine Learning
Fall 2022

Website: https://shaobo-li.github.io/ML-Fall2022.html

Class Time: T, H 11am– 12:15pm, CAPF 3056

Instructor: Shaobo Li, Ph.D. (shaobo.li@ku.edu)
Office Hours: M, W 10-11am or by appointment
Office: CAPF 3166

Teaching Assistant: Shaolin Pu (shaolin@ku.edu)
Office hours: M, TH 11am-noon or by appointment
Office: CAPF 4056

Prerequisites: College level courses on
- Mathematics
- Probability and statistics
- Programming

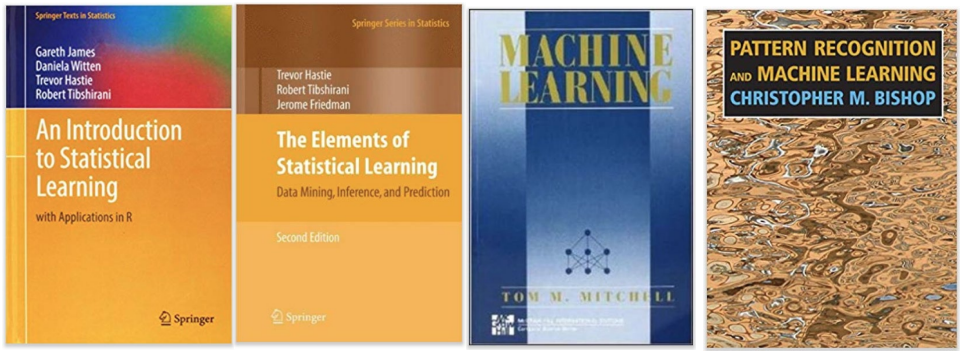
Course description: The course introduces different machine learning techniques and how they are applied to real world problems. The course heavily relies on statistical programming R. Students are also encouraged to explore related materials and different programming languages by their own.

Course Outcomes:
- Master level of computer programming skills
- Know popular machine learning algorithms
- Know fundamentals of machine learning theories
- Know how and why a specific algorithm works
- Know when a method works and when it does not

Grading:
- Assignment 40% (Later submission will NOT be accepted)
- Quiz 40%
- Final group project 20%

Course Format: in person
- Delivery: mixture of lecture and lab
- Assessment: group assignments, individual quizzes, and final group project
- Communication: email, office hour or appointment
- Attending class meetings is extremely important
- You should expect heavy workload especially if you do not have experiences of coding.

Recommended Textbook:



Class Communication:
To make sure that your message is not accidentally deleted as junk, please include '**BSAN750**' in the **email subject** line.

Accommodation for students with disabilities
The Student Access Center (SAC) coordinates academic accommodations and services for all eligible KU students with disabilities. If you have a disability for which you wish to request accommodations and have not contacted SAC, please do so as soon as possible. The SAC is located in 22 Strong Hall and can be reached at 785-864-4064 (V/TTY). Information about the SAC's services can be found at https://access.ku.edu/. Please also contact the instructor privately in regard to your needs in this course.

ACADEMIC CODE OF HONOR
The KU School of Business seeks to develop future leaders with the highest ethical standards. It is through a strong code of conduct that a feeling of mutual trust and respect between students, faculty, and staff is maintained. This code of conduct was developed by the students, faculty, and staff to articulate the School's core values and provide guidance on academic integrity. This code applies to the conduct of students, faculty, and staff at any function or academic activity conducted by the School of Business at the University of Kansas. https://business.ku.edu/honor-code.

If cheating is found, anyone involved will be given 0 grade, and case will be reported to university.

Other links

- **Handling Depression** KU Counseling and Psychological Services (CAPS)
- **Current COVID-19 quarantine policy:** https://protect.ku.edu/quarantine-isolation

Other policies: You need to send me early notice if you would miss a class or have possible late submission due to health-related issue, travel, or other emergencies. The instructor reserves the right to change the syllabus.

BSAN750 Data Mining and Machine Learning (Fall 2022)

Tentative Schedule

Week	Topic	Assignment (due on Monday)	Quiz (open on Tuesday)
1 Week of 8/22	Introduction, R programming		
2 Week of 8/29	R programming		
3 Week of 9/5	**Quiz** Machine Learning Basics	HW1 (due on 9/5)	Quiz 1 Open on Tuesday, 9/6
4 Week of 9/12	Simple ML algorithms: Clustering		
5 Week of 9/19	Simple ML algorithms: k-nearest neighbor		
6 Week of 9/26	**Quiz** Linear regression	HW2 (due on 9/26)	Quiz 2 Open on Tuesday, 9/27
7 Week of 10/3	Linear regression		
8 Week of 10/10	**No class on Tuesday (fall break)** Linear regression		
9 Week of 10/17	**Take-home quiz on Tuesday** Variable selection	HW3 (due on 10/17)	Quiz 3 Open on Tuesday, 10/18
10 Week of 10/24	Variable selection		
11 Week of 10/31	Logistic regression		
12 Week of 11/7	**Quiz** Logistic regression	HW4 (due on 11/7)	Quiz 4 Open on Tuesday, 11/8
13 Week of 11/14	Tree-based methods		
14 Week of 11/21	**No class on Thursday (Thanksgiving)**		
15 Week of 11/28	**Quiz** Tree-based methods	HW5 (due on 11/28)	Quiz 5 Open on Tuesday, 11/22
16 Week of 12/5	Neural networks		
Final week	**Group project presentation on 12/13**		