Welcome to COSC4555/5555

Chao Lan
Course Information

Time & Location: MWF 9-9:50am, EN3110

Instructor: Chao Lan (clan@uwyo.edu), EN4087

TAs: Yijun Liu (yliu20@uwyo.edu), Hui Hu (hhu1@uwyo.edu), EERB 411B

Office Hour: W 2-4:30pm (EERB), Th 1-3pm (EN).

Website: https://www.cs.uwy.edu/~clan/teach/ml2020
What you will need for this course.

COSC3020: required for CS major undergrad; others need approval of the instructor.

Math: working knowledge on linear algebra, probability and optimization.

Python: sufficient programming skills to implement algorithms from scratch.

Latex (Overleaf): write assignments and reports.
An Example

Lecture: linear regression model
- study its mathematical model (linear algebra/probability)
- derive its optimal solution (linear algebra/optimization)
- interpret it from a density estimation view (probability/statistics)

Assignment: given a variant of the linear regression model
- derive its optimal solution (linear algebra/optimization)
- interpret it from a density estimation view (probability/statistics)
- implement it from scratch in Python (programming)
- evaluate it on data sets and write reports (Latex)
Reference

- The Elements of Statistical Learning
  - Trevor Hastie
  - Robert Tibshirani
  - Jerome Friedman
  - Second Edition
  - Springer

- Pattern Recognition and Machine Learning
  - Christopher M. Bishop

- All of Statistics
  - Larry Wasserman

- Convex Optimization
  - Stephen Boyd and Lieven Vandenberghe
Policies

Grading
- 4550: assignment 50%, midterm 1 15%, midterm 2 15%, final 20%
- 5550: assignment 70%, midterm 1 10%, midterm 2 10%, final 10%
- quizzes (bonus)

Assignment (weekly)
- all written tasks must be done using Latex (template will be given).
- all programming tasks must be done using Python (template will be given).
- submit hard-copies of written tasks and zipped files of Python codes.
- late submissions will not be graded
Homework (due on Jan 31)

Register an account on Overleaf and complete the assigned tasks.
- https://www.overleaf.com
- templates will be given

Install Python 3.0 or above on your computer.
- https://www.anaconda.com/distribution/
Demo

LaTeX Evolved

The easy to use, online, collaborative LaTeX editor

Get started now

email@example.com

Password

Register