Machine Learning

Course Introduction

Fall 2023

Instructor: Xiaodong Gu

Instructor

Instructor

顾小东

Rm:1208

Teaching Assistants

林雅岚

Rm:1417

石雨凌

Rm:1417

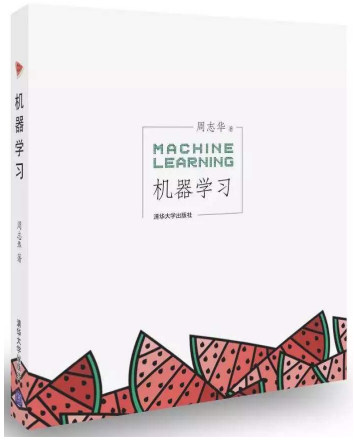
胡超

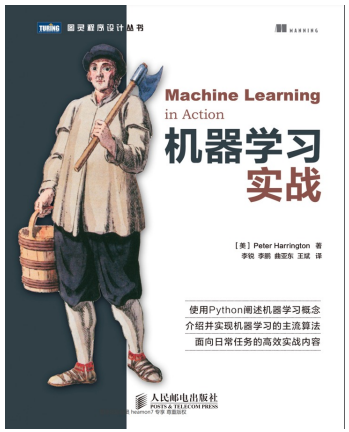
Rm:1417

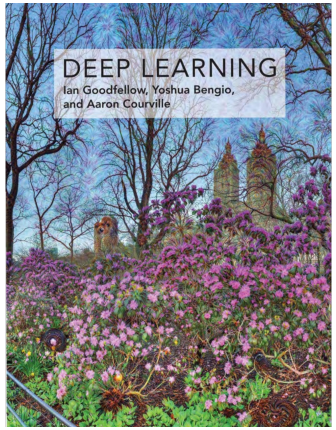
Website: https://oc.sjtu.edu.cn/courses/60105

E-mail: xiaodong.gu@sjtu.edu.cn

Reference Materials

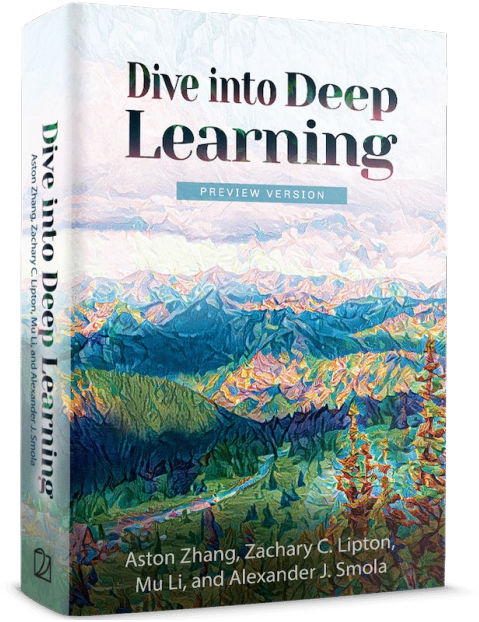






Reference Materials

Useful Online Materials



https://d2l.ai/index.html

Prerequisite:

《Linear Algebra》
《Probability and Statistics》
} 《Mathematical Foundations for Computer Science》
《**Python Programming**》

Contents

Concepts and Overview (L1)

Supervised
(L2-L9, L11-L14)

- Linear Regression
- Decision Tree
- Bayesian Classification
- Nearest Neighbor
- Logistic Regression
- Supporting Vector Machine
- Multilayer Perceptron
- …
- Recurrent Neural Networks
- Language Modeling (LLM)
- Convolutional Neural Networks
- Computer Vision

Unsupervised
(L15-L17)

- Clustering
- Dimension Reduction
- Generation

Reinforcement
(L18)

- Reinforcement Learning

Contents

Concepts and Overview (L1)

Machine Learning
(L2-L8, L15-16,L18)

- Linear Regression
- Decision Tree
- …
- MLP
- …
- Clustering
- Dimension Reduction
- Reinforce. Learning

Deep Learning
(L10-L14)

NLP
(L9-12)

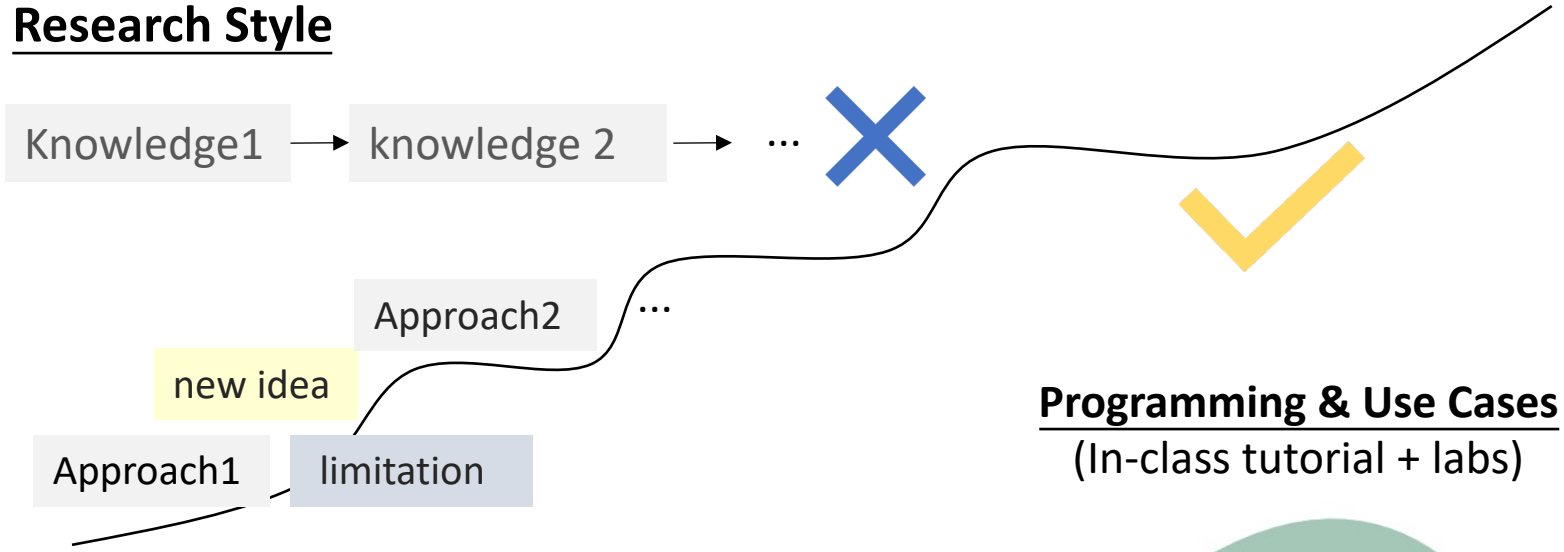
- Word2Vec
- RNN
- LLM

CV
(L13-14, L17)

- CNN
- CV
- Generation

Style of Our Course

Research Style



Programming & Use Cases

(In-class tutorial + labs)

In-Class Games

Grading

1) Attending： 5%

2) Homework×3： 15%

3) Lab×3： 20%

5) Final Exam： 60%