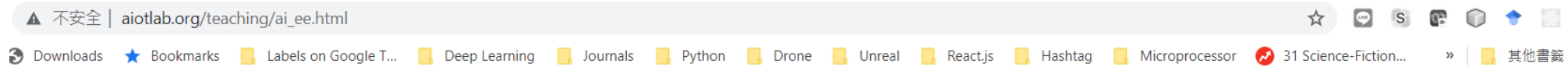


Course Requirements of Artificial Intelligence

Prof. Kuan-Ting Lai

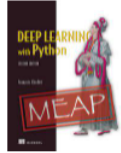
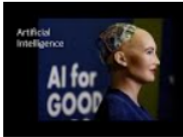

2021/9/22

Web (www.aiotlab.org/teaching/ai_ee.html)



ARTIFICIAL INTELLIGENCE 人工智慧

 Taipei Tech 電子系 人工智慧

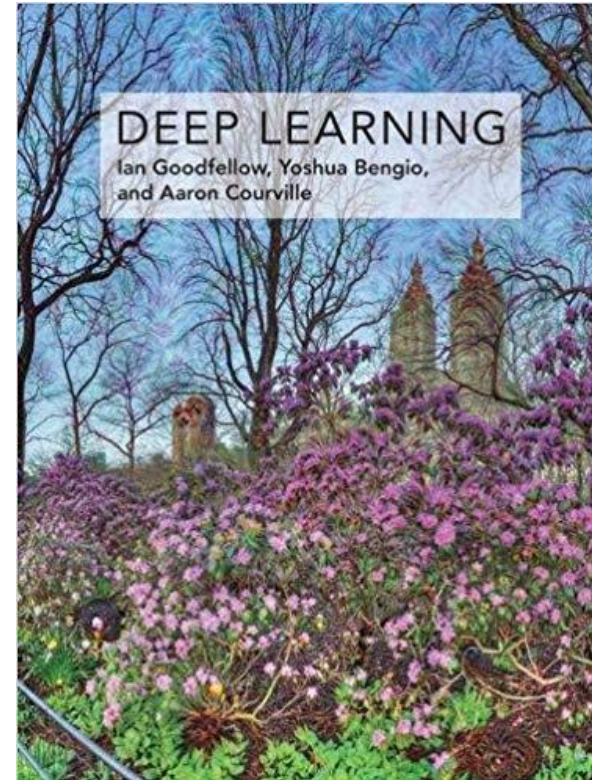
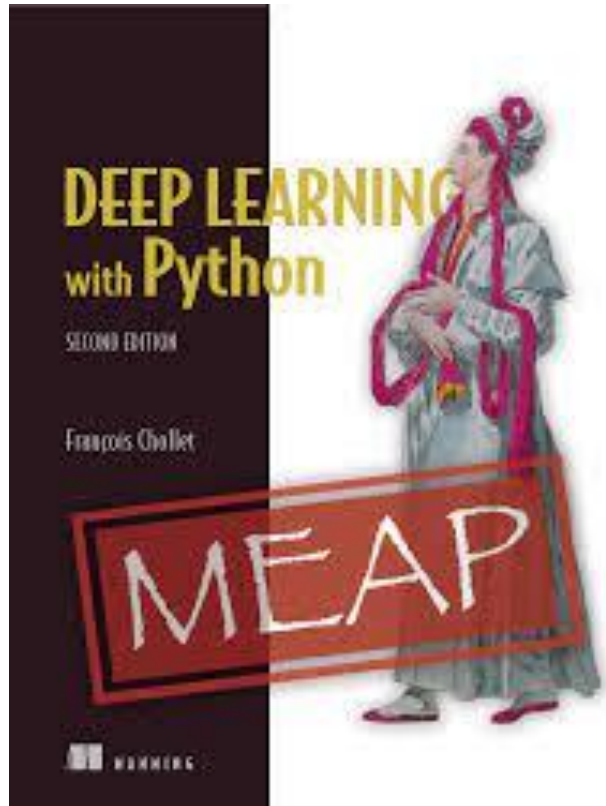
	Topic	Learning Objectives	Slides	Code	Video
	Textbooks & Reference	<ul style="list-style-type: none">• François Chollet, Deep Learning with Python, 2nd edition, 2021• Google Machine Learning Crash Course			
1	Past, Present, and Future of AI 人工智慧的前世今生與未來	<ul style="list-style-type: none">• What is AI?• Machine Learning• Deep Learning• Latest AI Applications	pdf		
2	Fundamentals of Machine Learning 機器學習之基本原理	<ul style="list-style-type: none">• Supervised Learning vs. Unsupervised Learning• Discrete Data vs. Continuous Data• Classification and Regression• Training & Testing• Avoid Overfitting	pdf	classifiers	

Course Requirements (under rolling correction)

- Kaggle-style homework (40%)
 - Fashion MNIST
 - Taiwanese Food 101
 - Stock Price Prediction
 - Drone Action Recognition
- Exam (30%)
 - Midterm (15%) and Final exam (15%)
- Final Project (30%)
 - Team members (1 ~ 4)
 - YouTube demo video
- Attendance (5%)
 - Quiz

Textbooks & References

- Francois Chollet, “Deep Learning with Python, 2nd Edition” Manning, 2021
- Ian Goodfellow, Yoshua Bengio, and Aaron Courville, “Deep Learning,” MIT Press, 2017
- Latest publications on Nature, CVPR, NIPS, ICML, AAAI, ICLR



Schedule

Date	Syllabus
9/22	Introduction to AI
9/29	Fundamental of Machine Learning
10/6	Applied Math + TensorFlow & Keras
HW1	Kaggle Homework 1 (Due 10/20)
10/13	Supervised & Unsupervised Learning
10/20	Convolutional Neural Network (CNN) (Francois (2017), Chapter 5)
HW2	Taiwanese Food 101 (Due 11/3)
10/27	Natural Language Processing
11/3	Recurrent Neural Network (RNN) and Long Short-Term Memory (LSTM)
11/10	Advanced Keras Techniques (Francois (2017), Chapter 7)
11/17	Midterm

Schedule (cont.)

Date	
11/24	Attention & Transformer
12/1	Generative Adversarial Networks (Francois (2017), Chapter 8)
HW3	Stock Price Prediction (Due 12/15)
12/8	Object Detection
12/15	Action Recognition
HW4	Deep Action Recognition (Due 12/29)
12/22	Deep Reinforcement Learning (DRL)
12/29	Deep Learning on Graphs
1/5	Deep Learning in Medical Imaging
1/12	Final Project Demo (YouTube Video, 10mins)
1/19	Final Exam

Grading Policy of Homework

Kaggle Ranking	Grade Description	Grade
Top 5%	Excellent	A+
5% ~ 20%		A
20 ~ 50%	Very Good	A-
Others		B+ ~ B
< Random Guess		C
No submission		F

*Use your ranking to interpolate the grades

*Top 3 students get one free cup of Bubble Tea!



IF YOU DON'T STUDY

YOU SHALL NOT PASS

Facebook Group (Taipei Tech 電子系 人工智慧)

<https://www.facebook.com/groups/639436343684974>

