



Deep Learning

深度學習

ECM9042 (5101)

李佳翰 教授

Prof. Chia-Han Lee



Course information

- **Instructor**
 - **Professor Chia-Han Lee 李佳翰教授**
 - **Email: chiahhan@nycu.edu.tw**
- **Teaching assistants (TAs)**
 - **陳昱維、游理毅、陳姵蓉、李育舜、謝旻哲**
(Office: ED716)
- **Course hours**
 - **Tue. 13:20-16:20**
- **Room: ED219**
- **Office hours: by appointment**



Course goal and prerequisite

- **Goal**
 - The goal of this course is to help students master the basic concepts and skills of deep learning that will be helpful for their study and research.
 - Students will learn how to implement deep learning.
 - Students will apply what they learn to the final project.
- **Prerequisite**
 - Linear algebra, Probability, Optimization (preferred), Machine learning (preferred)



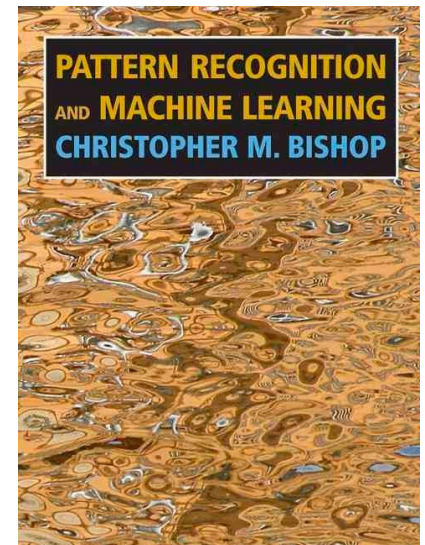
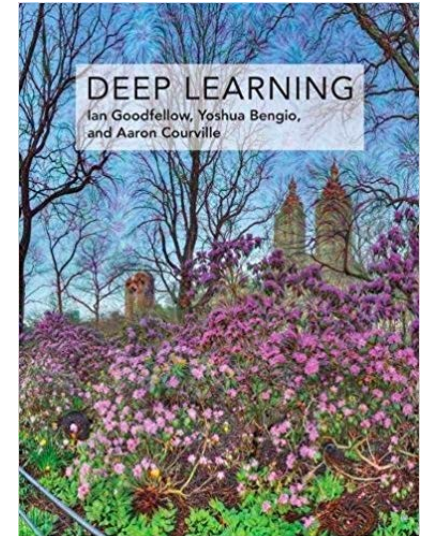
Course outline

- **Introduction to machine learning**
- **Deep forward networks**
- **Regularization for deep learning**
- **Optimization for training deep models**
- **Convolutional networks**
- **Recurrent and recursive networks**
- **Autoencoders**
- **Transfer learning**
- **(Monte Carlo methods)**
- **Deep generative models**
- **Reinforcement learning**



Readings

- **Textbook**
 - I. Goodfellow and Y. Bengio and A. Courville, *Deep Learning*, The MIT Press, 2016 (also available online)
- **Reference**
 - C. Bishop, *Pattern Recognition and Machine Learning*, Springer, 2007
- **Papers**
 - To be assigned





Grading

- **Homework (programming): 30%**
 - 3 programming homeworks
- **Paper presentation: 15%**
 - Present deep learning papers (in teams)
- **Midterm exam: 30%**
 - Written, closed book
 - Dec. 5
- **Final project: 25%**
 - Competition in teams



Policy

- **Asking and answering questions is encouraged.**
- **Copying codes/reports is prohibited.**
- **Grading is non-negotiable. Do not ask me for extra points!**
- **Come to talk to me whenever you have doubts/questions/problems. Do not wait until the last minute!**



If you decide to take this course, please take it seriously, and don't give up!