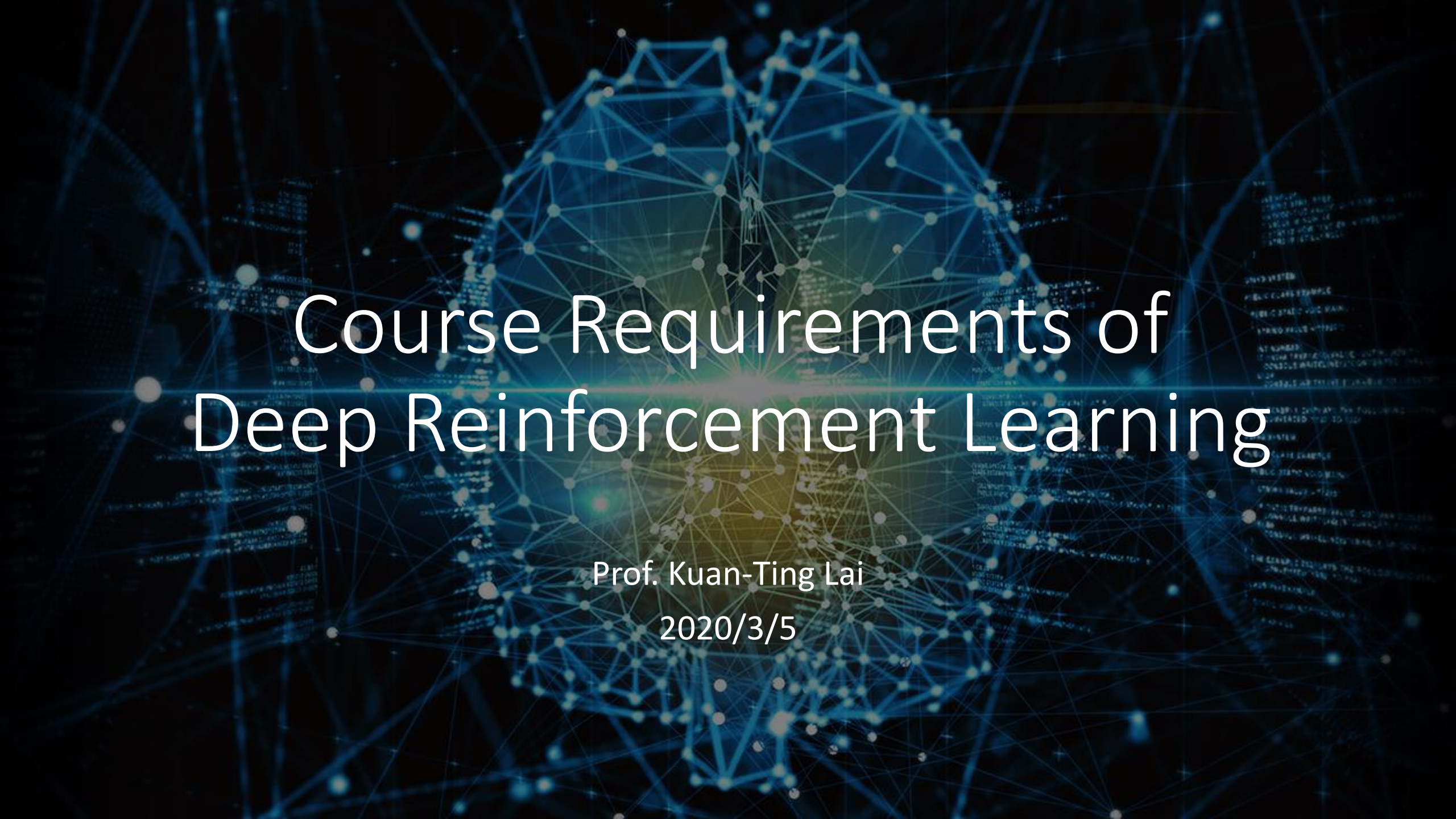


Course Requirements of Deep Reinforcement Learning

Prof. Kuan-Ting Lai

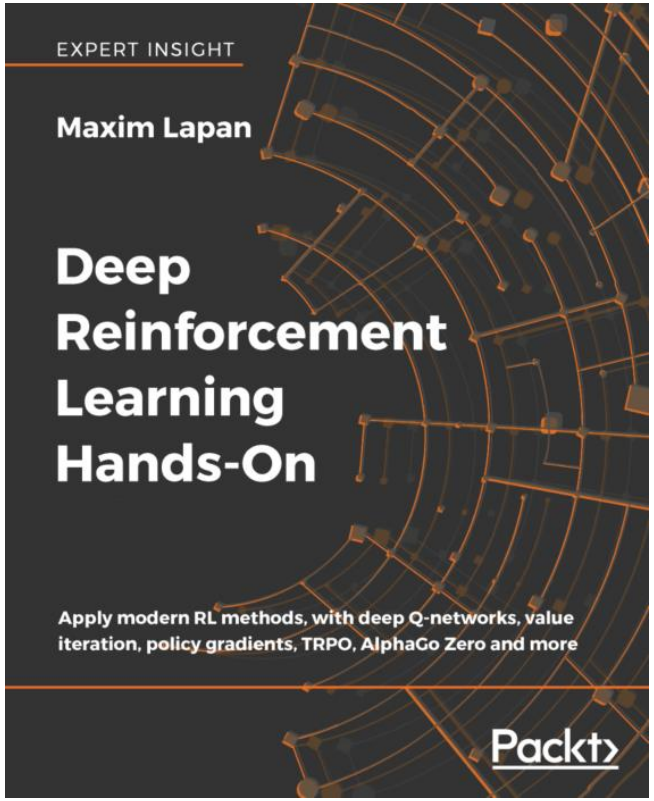
2020/3/5

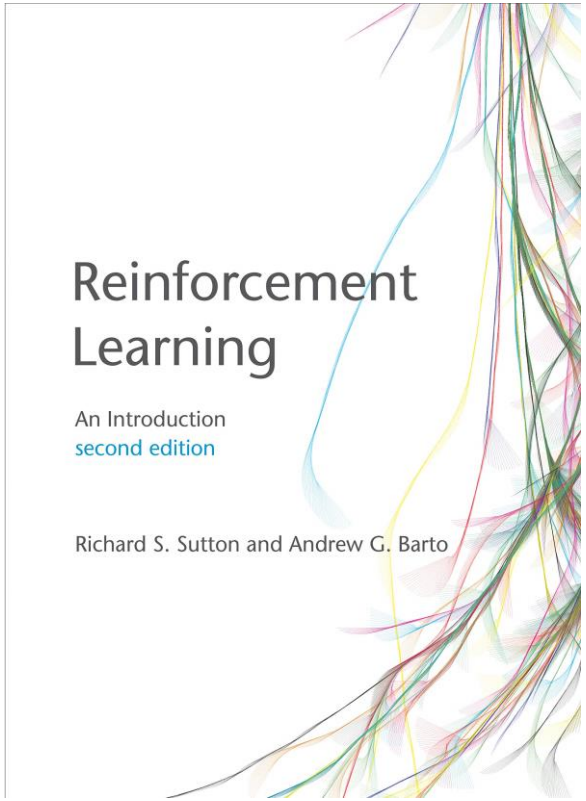
Course Requirements

- Kaggle-style homework (60%)
  - TBD
  - VizDoom
  - Microsoft AirSim
- Final Project (40%)
  - Team members (1 ~ 4)
  - Final report + Demo + Source code
- Attendance (5%)
  - Roll call
  - Answering questions

Textbooks & References

- Maxim Lapan, “Deep Reinforcement Learning Hands-on,” Packt, 2018
- Richard S. Sutton and Andrew G. Barto, “Reinforcement Learning, An Introduction, 2nd Edition” The MIT Press, 2018
- Latest publications on Nature, CVPR, NIPS, ICML, AAAI, ICLR





https://github.com/PacktPublishing/Deep-Reinforcement-Learning-Hands-On

Schedule

Date	Syllabus
3/6	Introduction to Deep Reinforcement Learning (Sutton (2018), Chapter 1, 2)
3/13	Finite Markov Decision Processes and Dynamic Programming (Sutton (2018), Chapter 3, 4)
HW1	TBD
3/20	PyTorch & OpenAI Gym (Lapan (2018), Chapter 2, 3)
3/27	Dynamic Programming & Monte Carlo Methods (Sutton (2018), Chapter 4, 5)
4/3	Temporal-Difference Learning (SARSA, Q-learning) (Sutton (2018), Chapter 6)
HW2	TBD
4/10	Deep Q-Networks (Lapan (2018), Chapter 6, 7)
4/17	Policy Gradients (Lapan (2018), Chapter 9)
4/24	Actor-Critic Method (Lapan (2018), Chapter 10)
HW3	Stocks Trading using RL

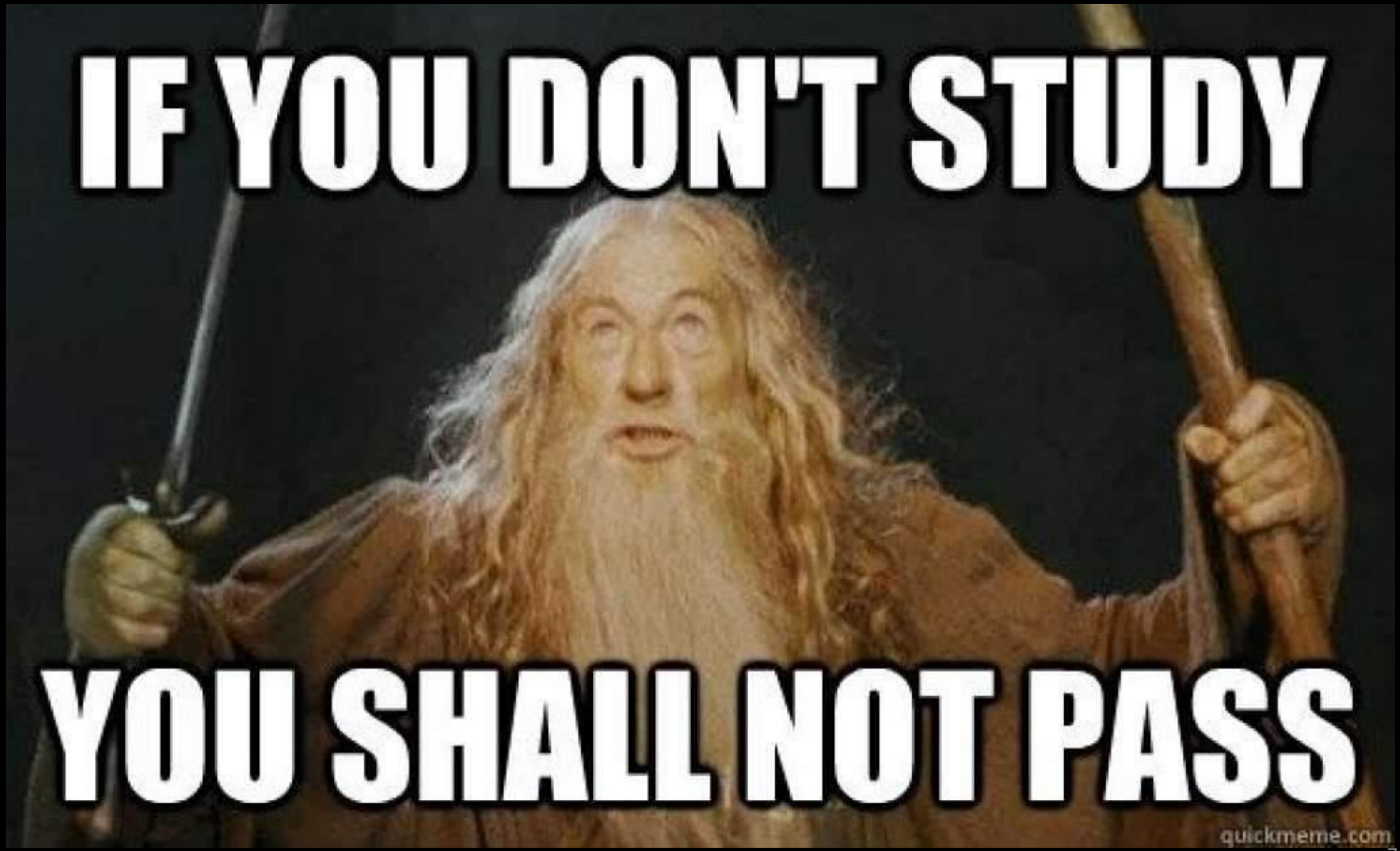
Schedule (cont.)

Date	
4/28	No Midterm, No Class
5/1	Final Project Proposal Due
5/8	A3C and A2C (Lapan (2018), Chapter 11 and OpenAI paper)
5/15	Continuous Action Space (Lapan (2018), Chapter 14)
5/22	Trust Regions – TRPO, PPO, and ACKTR (Lapan (2018), Chapter 15)
HW4	Playing a Shooting Game (VizDoom) (Due 12/15)
5/29	Black-Box Optimization in RL ((Lapan (2018), Chapter 16)
6/5	Beyond Model-free (Lapan (2018), Chapter 17)
6/12	AlphaGo Zero (Lapan (2018), Chapter 18)
6/19	Final Project Demo 1 (20 mins, talk + demo, in English)
6/26	Final Project Demo 2 (20 mins, talk + demo, in English)

Grading Policy of Homework

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

Top 3 students get one free cup of Bubble Tea!


IF YOU DON'T STUDY
YOU SHALL NOT PASS
quickmeme.com

Facebook Group (NTUT Deep RL Learning)

Teaching Assistants

- 蔡榮成: John Tsai (john0952270878@gmail.com)