CS 766

Boston University MET College 2026
Department of Computer Science

Deep Reinforcement Learning (CS 76)

Syllabus

Time & Location: Wed 6 PM - 8:45 PM, PHO 122.

Instructor: Avi Mohan (avimohan@bu.edu)
TA: Haolin Yang (haoliny@bu.edu)

Syllabus (tentative)

Lecture Number	Lecture date	Topics	Homework	Comments on lectures or homework	Readings/Misc.
1	Jan 21st	Discussion of Prerequisites, Homework Structure, Mid-term date etc. **Introduction to Reinforcement Learning.** Multiarmed Bandits. Why Probability?	HW 1		Seymour Lipschtz
	Jan 28th	Review of probability and random variables	HW 2		
2	Feb 4th	Multiarmed Bandits	HW 3		Class notes and Sutton and Barto Chapter 2
	Feb 11th				
3	Feb 18th	MDPs Part 1: Review of Conditional Expectation	HW 4		Class notes
	Feb 25th	MDPs Part 2: Markov Processes, Reward Processes, and Markov Decision Processes	HW 5		Lapan Chapter 1, S&B Chapter 3, and Class notes
4	March 4th	Dynamic Programming	HW 6		Lapan Chapter 5, S&B Chapter 4 and Class notes
	March 11th	Spring Break			
5	March 18th	Policy Gradient Methods			Lapan Chapter 11, S&B Chapter 13, and Class notes
	March 25th	**Mid-term Exam***		Deep neural networks!	
4	April 1st	Deep variants of PG methods	HW 7		Lapan Chapter 11
5	April 8th	Temporal Difference methods and Q-learning	HW 8		Lapan Chapters 6 and 8, S&B Chapters 6 and 7, and Class notes.
	April 15th	DQN and Double DQN	HW 9		
	April 22nd	Monday schedule			
6	April 29th	Actor Critic methods	HW 10		Lapan Chapter 12, and Class notes

Required Textbook:

[L24] Lapan, M., 2024. ***Deep reinforcement learning hands-on*.** Packt Publishing Ltd. ISBN-13: 978-1835882702

Additional Material

1. [SB18] Sutton, R.S. and Barto, A.G., 2018. ***Reinforcement Learning second edition: An Introduction*.** In ser. Adaptive Computation and Machine Learning series. MIT Press. ISBN- 13: 978-0262039246
   Link: http://incompleteideas.net/book/the-book-2nd.html

2. [M20] Morales, M., 2020. ***Grokking deep reinforcement learning*.** Manning. ISBN- 13: 978-1617295454