CS 294: Deep Reinforcement Learning, Fall 2018

IMPORTANT: If you are a UC Berkeley undergraduate student or non-EECS graduate student and want to enroll in the course for fall 2018, please fill out this application form. We will select students from this list in August based on space availability and prerequisites.

Instructor: Sergey Levine

GSIs: Kate Rakelly, Gregory Kahn, Siddharth Reddy

Reader: Soroush Nasiriany

Lectures: 306 Soda, 10:00 - 11:30 am, Wednesday and Friday

Office Hours: TBD, by appointment (see signup sheet on Piazza)

Communication: Piazza will be used for announcements, general questions and discussions, clarifications about assignments, student questions to each other, and so on. To sign up, go to Piazza and sign up with “UC Berkeley” and “CS294-112”. We request that enrollment be restricted to students enrolled in the class or on the waitlist.

If you are not enrolled, but are interested in following and discussing the course, there is a subreddit forum here: reddit.com/r/berkeleydeeprlcourse/

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Fall 2018 Materials

Lecture Videos

The course lectures are available below. The course is **not** being offered as an online course, and the videos are provided only for your personal informational and entertainment purposes. They are not part of any course requirement or degree-bearing university program.
For all videos, **click here**.
For live stream, **click here**.

Lectures, Readings, and Assignments

Below you can find an outline of the course. Slides and references will be posted as the course proceeds.

- TBD

Previous Offerings

A full version of this course was offered in Fall 2017 and Spring 2017. Lecture videos from Fall 2017 are available **here**; those from Spring 2017, **here**.

An abbreviated version of this course was offered in Fall 2015.

Prerequisites

CS189 or equivalent is a prerequisite for the course. This course will assume some familiarity with reinforcement learning, numerical optimization and machine learning.

For introductory material on RL and MDPs, see

- CS188 EdX course, starting with *Markov Decision Processes I*
- Sutton & Barto, Ch 3 and 4.

Related Materials

Courses

- Geoff Hinton on Coursera
- Andrew Ng on Coursera
- Dave Silver's course on reinforcement learning / Lecture Videos
- Nando de Freitas' course on machine learning
- Andrej Karpathy's course on neural networks

Relevant Textbooks

- Deep Learning

- Sutton & Barto, Reinforcement Learning: An Introduction
- Szepesvari, Algorithms for Reinforcement Learning
- Bertsekas, Dynamic Programming and Optimal Control, Vols I and II
- Puterman, Markov Decision Processes: Discrete Stochastic Dynamic Programming
- Powell, Approximate Dynamic Programming

Misc Links

- A collection of deep learning resources