

[Syllabus \(RL/syllabus.html\)](#)

[Schedule \(RL/lectures.html\)](#)

COMP-767: Reinforcement Learning - Winter 2020

News

The first class takes place Monday, January 6, 2020.

General Information

Where: Trottier (ENGTR) 0100

When: Monday and Wednesday, 8:35-9:55am

What: The goal of this class is to provide an introduction to reinforcement learning, a very active sub-field of machine learning. Reinforcement learning is concerned with building programs that learn how to predict and act in a stochastic, dynamic environment, based on past experience. Applications of reinforcement learning range from classical control problems, such as powerplant optimization or dynamical system control, to game playing, inventory control, and many other fields. Notably, reinforcement learning has also produced very compelling models of animal and human learning. During this course, we will study theoretical properties and practical applications of reinforcement learning. We will follow the second edition of the classic textbook by Sutton & Barto (available online), but we will supplement it with papers and other materials.

Instructor

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Teaching assistants

Nishanth Anand (<https://mila.quebec/en/person/nishanth-anand/>)

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References

Required textbook:

- Richard S. Sutton and Andrew G. Barto, "Reinforcement learning: An introduction", Second Edition, MIT Press (<http://incompleteideas.net/book/the-book-2nd.html>), 2019

Additional textbooks:

- Alekh Agarwal, Nan Jiang and Sham M. Kakade, "Reinforcement Learning: Theory and Algorithms" (<https://rltheorybook.github.io>), in preparation
- Csaba Szepesvari, "Algorithms for Reinforcement Learning", Morgan and Claypool (<http://www.ualberta.ca/~szepesva/RLBook.html>), 2010.
- Dimitri Bertsekas and John Tsitsiklis, "Neuro-dynamic programming", Athena Scientific (<http://www.athenasc.com/ndpbook.html>), 1997.

Lecture notes and other relevant materials are linked to the lectures web page ([RL/lectures.html](http://www.cs.mcgill.ca/~dprecup/courses/rl/lectures.html)).

MyCourses (<http://www.mcgill.ca/mycourses>) will be used only for bulletin board, discussion groups and assignment submission and grading.
