

# E6885 (Fall 2017) Course Project

This course project aims to provide hand-on experience and an opportunity of research in the field of reinforcement learning. Based on your own background, you are free to select any RL-related topic for the project. To inspire ideas, you can consider RL publications in NIPS, ICML, RLDM, AAMAS, etc.

## I. IMPORTANT DATES

- 1) Proposal Submission: **Oct. 16**
- 2) Milestone: **Nov. 20**
- 3) Final report: **Dec. 15**

## II. PROJECT PROPOSAL

The project proposal should be 1-2 page long, including the following:

- 1) Project team members ( $\leq 5$ ). For a large team (e.g. 4 or 5 members), a larger project is expected.
- 2) Introduction to the problem and literature review (i.e. related works in literature).
- 3) The expected contributions/novelty in your project.
- 4) Methodology: if an application problem, what algorithms will you use or build on to complete your work? if a theoretical problem, what method will you use to make progress?
- 5) What data set will be used and how to obtain?
- 6) How will you evaluate your results? e.g. performance metrics?
- 7) what is expected to achieve for the project milestone?

Only **one member** in your team needs to submit the proposal.

## III. PROJECT MILESTONE

The project milestone report should be 3-4 pages and use the international conference on machine learning (ICML) template. The report needs to present the preliminary results of your project. In particular, the report should at least include the followings:

- 1) Introduction, related work and background. See a sample from ICML proceeding papers.
- 2) Preliminary theoretical and simulation results. If you are implementing an algorithm, describe the latest status and the remaining work to complete for the project.

Only **one member** in your team needs to submit the report.

#### IV. PROJECT FINAL REPORT

The final report should be no more than 8 pages excluding references and the statement of team member contributions. If needed, the theoretical proofs or the detailed methodology of implementing an algorithm can be submitted as supplementary materials. All necessary information needs to be submitted such that all results in the report can be recovered (for grading). The report should follow the ICML structure as follows:

- 1) Title, Authors
- 2) Abstract
- 3) Introduction
- 4) Background/Related Work
- 5) Approach: algorithm development/theoretic results
- 6) Experiment results
- 7) conclusion
- 8) references
- 9) a statement on the contributions of each member of the team.

Only **one member** in your team needs to submit the report. Exceptional project results will be further reviewed by the instructor and other professors, and then recommended to submit to a machine learning conference.