

15-780: GRADUATE AI (SPRING 2018)

Course Project

Release: April 12, 2018,
Videos due: May 1, 2018, 10:00pm
Report due: May 2, 2018, 11:59pm

Project instructions

The final assignment in 15-780 is the course project. The purpose of this project is to give you a taste of research in AI, with an emphasis on topics covered in class.

A project may consist of a theoretical or empirical investigation of an original problem, an extension or improvement to an existing algorithm, or an evaluation of known techniques in a new domain or with new data. You are free to select any topic along these lines for your project, as long as it builds upon material that was covered in class; see the end of this document for more specific guidelines.

Logistical instructions

Projects are to be done in groups of two to three students each. Please get in touch with the course staff if you cannot find a partner. Naturally, the number of team members will be taken into account during grading (i.e., a larger team would be expected to have a larger project). Ideally, each member of your team should spend 20 to 30 hours on the project, including the time to create the project deliverables.

Each group will have to submit the following items:

- **Video overview.** All projects will be presented as 2-minute videos via YouTube. Presentations will take place in class on May 2.
 - Submission instructions: Upload your video to YouTube (with the privacy setting as either “public” or “unlisted”), and submit the link here:
<https://goo.gl/forms/pKN1NNf1Nxn1LfeR2>
 - Due date: **May 1, 10:00pm**
- **Written report.** All projects should be accompanied by a 2 to 4 page report (possibly with additional details in an appendix).
 - Submission instructions: Upload your report in **PDF format** to the “Project Report” assignment on Autolab. (Only one upload is required per group; you can add members to your group via the “Group Options” menu within the assignment.)
 - Due date: **May 2, 11:59pm**

Tips and guidelines

- The best projects are *creative* and *original*. These qualities are more important than simply doing intensive technical work, so spend time thinking about a good problem.
- Don't worry if you don't obtain positive results; it's okay if you try an interesting approach and it doesn't work. We care most about your ideas, your effort, and what you learned over the course of working on the project.
- Projects should be directly related to topics covered in class. So, for example, an application of reinforcement learning would not be a good project, since this topic was never discussed in a lecture.
- Projects should not be directly related to work you are already doing as part of your graduate research. Graduate research typically involves significant input from your advisor, and we are looking for something that is entirely your own. That said, you should feel free to propose new project ideas that fall in the same general area as your research interests.
- In previous years, the majority of projects simply applied deep learning to various problems. Deep learning is an acceptable topic (as it was indeed covered in class), but since these projects are fairly straightforward and often don't require much creativity, we will be setting a high bar for projects focused on deep learning applications.
- The instructors (Zico and Ariel) are happy to discuss your project ideas with you. Do not hesitate to reach out by email, either to check whether an idea looks valid and/or promising, or to schedule a meeting for more in-depth discussions.