

ICLR 2018 Reproducibility Challenge

This document goes over the course project description for the *EECS 498/598 Reinforcement Learning* at the *University of Michigan*'s submissions to the [Reproducibility Challenge](#).

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Introduction

As we've seen from the homework ensuring that work in machine learning research is reliable and reproducible is a major challenge. In this project your role will be as a scientific inspector, whose job is to verify and validate the experimental results and conclusions of a previous scientific paper.

In particular, you groups of 2-3 students will select a paper from the [ICLR 2018 submissions](#), to investigate. ICLR is the [International Conference on Learning Representations](#), and is a top-tier machine learning conference focusing on the following topics (non-exhaustive list):

- Representation learning for planning and reinforcement learning
- Hierarchical models
- Learning representations of outputs or states
- Applications in vision, audio, speech, natural language, robotics, or other fields.

The group's investigation can **result may either be positive** -- ability to reproduce, **or negative** -- unable to reproduce and potential explanations. It is not necessary to reproduce all of the experiments presented in the paper. If the author's code is publically available, it should be used. With public code the verification of the work must be more in-depth exploring unusual choices and explaining implementation details.

This project will culminate in the submission of a workshop paper (3-page short paper, not as rigorously peer-reviewed) to the challenge and the public release of all associated code, making your own work reproducible.

Please read the [official challenge page](#) for more details about the challenge in general, AND the [Workshop Track - Call for Papers](#).

Deliverables

All deliverables, save peer reviews, only require that a single group member submits the work to Canvas, or Gradescope when stated, respectively.

Proposal

A **short** document containing the following information:

- The group members (2-3 people).
- The paper that's going to be explored.
- How the paper relates to the topics being covered in our class.
- Why the paper is computationally reasonable to reproduce in our time constraint.

This document will be turned in on **Gradescope**. If the instructors disagree with the proposal being feasible and relevant to our course, we will ask you to revise and resubmit the proposal.

Paper selection does not need to be unique across groups, but we strongly encourage it.

Draft

A rough draft of the full paper (.pdf), which may be missing some experimental results, in [ICLR style](#). The paper should have roughly the following sections: Introduction, Methodology, Results, Conclusion, and References. If you haven't completed all your experiments, which is OK, write what you will do and note what is not finished.

Peer Reviews

Each group member will be individually assigned **two** of the other group's draft papers to provide feedback and editing on. Each group member must do this separately. Feedback should include, but is not limited to:

- Make suggestions as to how the author can improve clarity, succinctness, and overall quality of the paper.
- Ensuring the direction of the work satisfies the requirements for the challenge.
- Suggestions/recommendations for directions the author's should consider.
- What the authors are doing *well*, remember reviewing does not have to be all negative.

Final

The final draft of the full paper (.pdf) in the correct style, as specified by ICLR. This must be submitted **both** to Canvas and on OpenReview. This paper must follow all guidelines set by ICLR 2018.

Your code must also be provided either as a zip/tar file, or as a link to a public github repository.

Timeline

Oct 27th	ICLR Submissions Deadline
Nov 1st	Proposals Due
Nov 8th	Must be registered for Reproducibility Challenge, once project is approved.
Nov 22th	Paper Draft Due
Dec 6th	Peer Review Due
Dec 15th	Final Paper & Code Due Submitted on Canvas and on OpenReview

Honor Code

All group work, i.e., not the peer reviews, is to be completed only within your own group. You may receive help from the course instructors and you may consult with members of other groups in the course, but you must complete your group's calculation and project write-up on your own. It is okay and **encouraged** to utilize the materials/code provided by the original authors, but you may not share code/resources with another group.

The peer reviews are to be completed on your own. You may receive help only from the course instructors. At no time may you receive help from someone who is not a current instructor.

Grading Criteria

This project is worth 35% of the full course grade (of 100%). The 35% is broken down by deliverable as follows:

Proposal	5%
Draft	5%
Peer Review	10%
Final	15%

This section contains rough guidelines that we will utilize to evaluate your submissions for each of the deliverables.

Proposal

- Answering all of the questions described in the Deliverables section.
- Having to resubmit the proposal, on request, will not count against your group *unless* either proposal is missing the required information.

Draft

- Follows guidelines for ICLR papers.
- Introduction/Previous Work/Methodology nearly finished. These sections do not have to be explicitly labelled as we've written here, but the contents they represent need to be present in your paper somewhere.
- Results/Conclusion outlined, and describing progress and expected results. Again these sections do not have to be labelled as we've written here. These sections may be less polished, but should describe your progress currently and your plan for what's next with the expected outcomes.

Peer Review

- We will not be grading on *quantity* of suggestions offered, but instead perceived *quality*.

Final

- Follows guidelines for ICLR papers.
- All sections described in the Draft in a polished state.
- Code is available, **and** contains detailed instructions to reproduce the results presented in your paper.