
535514 RL Team Project: Proposal Guidelines (Please put your project title here)

Your Name 1 Your Name 2 Your Name 3
Department of Computer Science
National Yang Ming Chiao Tung University
{member1, member2, member3}@nycu.edu.tw

1 Project Overview

1.1 Profile

Track: 1. Algorithm / 2. Dataset and Benchmark / 3. Application

Abstract and project goal:

TL;DR ("Too Long; Didn't Read"):

1.2 Motivation

Please motivate your topic by highlighting why you'd like to work on this project. Specifically, please describe the following aspects:

- Why is the problem interesting?
- Describe 1-3 most critical challenges that you can think of regarding this RL problem. Please write them down clearly as "Challenge 1: ..."; "Challenge 2: ...".
- Justify why the problem remains open or unsolved? Please also name a few most relevant prior works (e.g., 2-3 papers published in the last 2 years and 2-3 seminal papers in that field) as a justification.
- Specify which work(s) is the state-of-the-art method in your opinion.

2 Problem Formulation

Please use 1-2 paragraphs to concisely describe your problem in a concrete way. For example:

- Describe the environment model that you consider, e.g., MDPs, partially-observable MDPs, bandits, and adversarial setting.
- Describe the information available to the RL learner.
- Specify the reward or feedback signal available, e.g., typical scalar rewards, preference feedback, expert demonstrations, non-expert demonstrations, multi-objective reward vectors, or unsupervised settings.
- Specify the optimization problem of your project (including the objective function and the constraints, if any).
- Specify the assumptions that you may want to make.

3 Empirical Evaluation

Please concretely describe how you would evaluate the effectiveness of your method by completing the following two parts

3.1 Performance Metrics

Please write down a few key performance metrics that you plan to adopt in your evaluation. If you plan to create your own new performance metric, please also justify why it is required and reasonable.

3.2 Baseline Methods

Please provide a list of the necessary baseline methods.

- Baseline 1 [authors, year]: One sentence description of this method.
- Baseline 2 [authors, year]: One sentence description of this method.
- ...

In the above, please use “\citep{...}” to add the references.

3.3 Benchmark Tasks or Datasets

Please provide a list of the suitable benchmark tasks (e.g., tasks in MuJoCo, Atari games, Robosuite, and MetaWorld) or datasets (e.g., D4RL) that you plan to use in your evaluation.

If your project is in the Dataset and Benchmark Track, then please describe the detailed procedure on how you plan to construct your datasets or benchmark tasks.

4 Methodology (Optional)

Please use one paragraph to explain your high-level idea of the solution. If possible, draw an illustrative diagram to describe your high-level idea.

5 Expected Contributions of Each Team Member

Please describe how you would collaborate with each other and specifically what each member would contribute to this project.

- Name of Member 1:
- Name of Member 2:
- Name of Member 3:

As you just kick off the project, it is very likely that you may need to reallocate the tasks among yourselves as you proceed. Please make sure that you reach a consensus on the expected contributions.

References