

Imitation-learning-project

Tasks for this week

- ☐ Read 2 papers of your choice
- ☐ Go through the code base
- ☐ Apply code on 1 small task (without needing GPU)
- ☐ Meet with prof

General Outline

The project aims to solve/build a single research idea by balancing its theory with empirical evaluation. We hope to begin by gaining intuition about the problem and addressing it on a simple toy task. The method can then be extended to non-trivial robot control tasks in order to compare its efficacy with baseline algorithms.

Paper List

I guess we can pick 2 papers to read by entering our name in the **Name** column. The list consists of basic papers which will help you get started on RL. In case you have any other papers you are interested in then feel free to put it here. Tasks include the following-

- Read papers completely
- Study the code base
- Run code on a smaller problem (potentially MDP)

Paper	Code Link	Name	Implementation Task
SAC	here	-	-
DDPG	here	-	-
TD3	here	-	-
PPO	here	-	-
Learning by Cheating	here	-	-
Eligibility Traces	here	Karush	-
Dyna Planning	here	-	-
A3C	here	-	-

A longer list of papers is available [here](#).

Distribution of Tasks

As discussed, we can all pick one algorithm to implement and improve on a small task. In case our improvements work, we will apply these on new tasks and finalise results. Upon completion we will package our code base and distribute duties for report and presentation.

Task	Karush	Reza	Mohammad
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Task	Karush	Reza	Mohammad
Implement Algo-1 on small task	✓	-	-
Implement Algo-2 on small task	-	✓	-
Implement Algo-3 on small task	-	-	✓
Improve Algo-1 on small task	✓	-	-
Improve Algo-2 on small task	-	✓	-
Improve Algo-3 on small task	-	-	✓
Apply Algo-1 on new tasks	✓	-	-
Apply Algo-2 on new tasks	-	✓	-
Apply Algo-3 on new tasks	-	-	✓
Package code base	✓	✓	✓
Write Report	✓	✓	✓
Wrap presentation	✓	✓	✓

Tentative Schedule

Week	Task	Description	Completed
1	Literature Review	Brainstorm Ideas and jot down good ones	✓
2	Literature Review	Brainstorm Ideas, Meet with prof	need to meet with prof
3	Formulate Problem	Setup the problem with potential solutions	-
4	Implement Toy Problem	Solve base case and gain intuition	-
5	Implement Toy Problem	Complete base case solution and interpret results	-
6	Implement Algorithm	Solve main problem	-
7	Implement Algorithm	Solve main problem	-
9	Accumulate Results	Interpret and finalize results	-
10	Write Report	Draft and finalize report	-
11	Wrap Project	Package code base and wrap ppt	-