

# Deep Eligibility Traces

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## Introduction

This repository consists of implementations of Eligibility Traces and corresponding algorithms in the deep learning setting. Algorithms are implemented in [PyTorch](#) and [Tensorflow 2.0](#) on a range of problems. Custom toy problems are provided in the [MDP](#) folder.

## Trace Algorithms

Following algorithms are available in the current version-

### PyTorch

Algorithm	Trace	Link	Implementation
TD-lambda	• <input type="checkbox"/> Accumulating Trace	<a href="#">Sutton &amp; Barto, Chapter 12</a>	TBA
	• <input type="checkbox"/> Replacing Trace		
	• <input type="checkbox"/> Dutch Trace		

### Tensorflow 2.0

Algorithm	Trace	Link	Implementation
TD-lambda	• <input type="checkbox"/> Accumulating Trace	<a href="#">Sutton &amp; Barto, Chapter 12</a>	TBA
	• <input type="checkbox"/> Replacing Trace		
	• <input type="checkbox"/> Dutch Trace		

## Custom Environments

Following is the list of custom toy environments-

Environment Name	Link	Implementation
Cyclic MDP	<a href="#">ESAC</a>	TBA
One-state MDP	<a href="#">Sutton &amp; Barto</a>	TBA
One-state Gaussian MDP	<a href="#">Sutton &amp; Barto</a>	TBA

## Usage

Notes on running implementations to be updated soon.

## Citation

If you find these implementations helpful then please cite the following-

```
@misc{karush17eligibilitytraces,  
  author = {Karush Suri},  
  title = {Deep Eligibility Traces},  
  year = {2021},  
  howpublished = {\url{https://github.com/karush17/Deep-Eligibility-Traces}},  
  note = {commit xxxxxxxx}  
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