

# 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 [MDPs](#) folder.

## Trace Algorithms

Following algorithms are available in the current version-

### PyTorch

Algorithm	Link	Implementation	Notes
Sarsa	<a href="#">Sutton &amp; Barto</a>	<a href="#">sarsa.py</a>	Works well
TD-lambda	<a href="#">Sutton &amp; Barto, Chapter 12</a>	<a href="#">TDlamb.py</a>	Requires tuning

## Custom Environments

Following is the list of custom toy environments-

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

## 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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