

# MC & TD

测验, 4 个问题

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1.

Why do we need function approximation in RL? Check all that apply.

- ☐ Learning with tabular methods is much more unstable compared to learning with function approximation.
  - ☐ Relying on function approximation allows us to achieve greater reward in any environment.
  - ☒ Because we want our agent to be memory-, space- and data efficient.
  - ☒ Because the state and action space may be big or combinatorially enormous, rendering tabular methods impossible to use.
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2.

Monte-Carlo learning (MC) vs Temporal Difference learning (TD). Select all options that apply.

- ☒ TD targets have small variance.
- ☒ In MC learning we cannot update the model until the end of an episode is reached.
- ☐ In MC learning we can use as few as one step of experience  $(s, a, r, s')$  to update the model.
- ☐ MC targets have small variance.
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3。

In TD learning we approximate...

- ☐ Reward function.
- ☐ Policy function.
- ☐ Discount factor  $\gamma$ .
- ☒ Expectation of targets.
- ☒ Value function.

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4。

What is correct about Offline and Online methods?

- ☐ TD is offline.
- ☒ MC is offline.
- ☒ TD is online.
- ☐ MC is online.



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