

## On-policy Prediction with Approximation

[← Back](#)

Practice Assignment • 30 min



1. Which of the following statements is true about function approximation in reinforcement learning? (**Select all that apply**) 1 point
- ☒ It can help the agent achieve good generalization with good discrimination, so that it learns faster and represent the values quite accurately.
  - ☒ It allows faster training by generalizing between states.
  - ☒ It can be more memory efficient.
  - ☐ We only use function approximation because we have to for large or continuous state spaces. We would use tabular methods if we could, and learn an independent value per state.
2. We learned how value function estimation can be framed as supervised learning. But not all supervised learning methods are suitable. What are some characteristics of reinforcement learning that can make it harder to apply standard supervised learning methods? 1 point
- ☐ Data is available as a fixed batch.
  - ☒ When using bootstrapping methods like TD, the target labels change.
  - ☒ Data is temporally correlated in reinforcement learning.
3. Value Prediction (or Policy Evaluation) with Function Approximation can be viewed as supervised learning mainly because \_\_\_\_\_. [choose the most appropriate completion of the proceeding statement] 1 point
- ☐ We can learn the value function by training with batches of data obtained from the agent's interaction with the world.
  - ☐ We use stochastic gradient descent to learn the value function.
  - ☒ Each state and its target (used in the Monte Carlo update, TD(0) update, and DP update) forms an input-output training example which we can use to train our approximation to the value function