



# Lecture 06: On-Policy Prediction and Control with Function Approximation

Lecture 05: Value Function Approximation

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## Questions (6)

1 - Quiz

**We introduce function approximators, because...**





60 sec

-  they are more stable to train. ✗
-  we want to generalize over similar states and actions. ✓
-  they converge to better value functions. ✗
-  they can cope with very large state and action spaces. ✓

2 - Quiz

**Differentiable function approximators are often preferred, because...**

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-  others do not work. ✗
-  they are guaranteed to find the global optimum. ✗
-  the gradients yield the influence of parameters. ✓
-  we have to handle non-stationary data. ✗

3 - True or false

**In contrast to gradient MC prediction, on-policy linear semi-gradient TD is not guaranteed to converge.**

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-  True ✗
-  False ✓

## 4 - Quiz

**When can we directly calculate the least squares solution?**

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Linear combination of non-linear features.



Non-linear combination of linear features.



## 5 - Quiz

**What do we estimate in semi-gradient SARSA via function approximation?**

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The state-value function.



The policy.



The action-value function.



The model.



## 6 - True or false

**Similar to tabular methods, memory-based function approximation does not generalize.**

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True



False

