

Advanced topics in Deep Reinforcement Learning

Week 5 slides

Reproducibility in Deep Reinforcement Learning with Maximum Entropy (2023)

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Reproducibility in Deep Reinforcement Learning with Maximum Entropy (2023)

- Performance and convergence of algorithms sometimes quite brittle under different random seeds (even for up to 10 seeds)
- Softer approach to improve reproducibility
- Implicit exploration strategy can compensate for disturbances caused by intrinsic sources of non-determinism, such as random seeds
- Can be used to make training more stable and results more reproducible

Reproducibility in Deep Reinforcement Learning with Maximum Entropy (2023)

- From DQN to SQN (soft Q-learning)
- Entropy term to the Bellman equation
- Reduces sensitivity to intrinsic and extrinsic influences (especially random seeds) in DRL

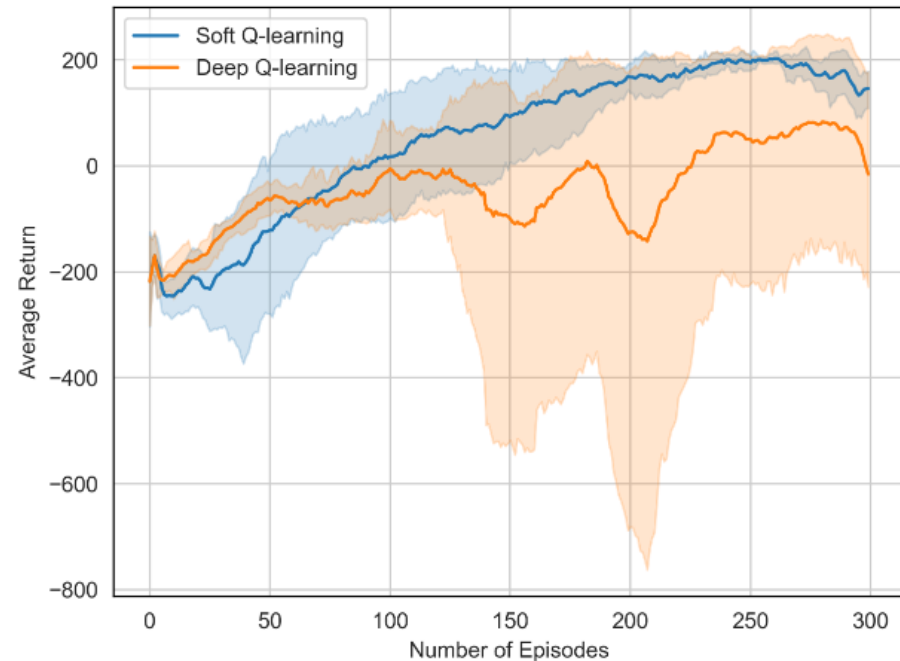


Fig.1: Lunar lander performances of DQN and SQN algorithms under a set of random seeds using the same set of hyper-parameters