Assignment 2: Policy Gradient

Andrew ID: `Write your Andrew ID here.`
Collaborators: `Write the Andrew IDs of your collaborators here (if any).`
NOTE: Please do **NOT** change the sizes of the answer blocks or plots.

5 Small-Scale Experiments

5.1 Experiment 1 (Cartpole) – [25 points total]

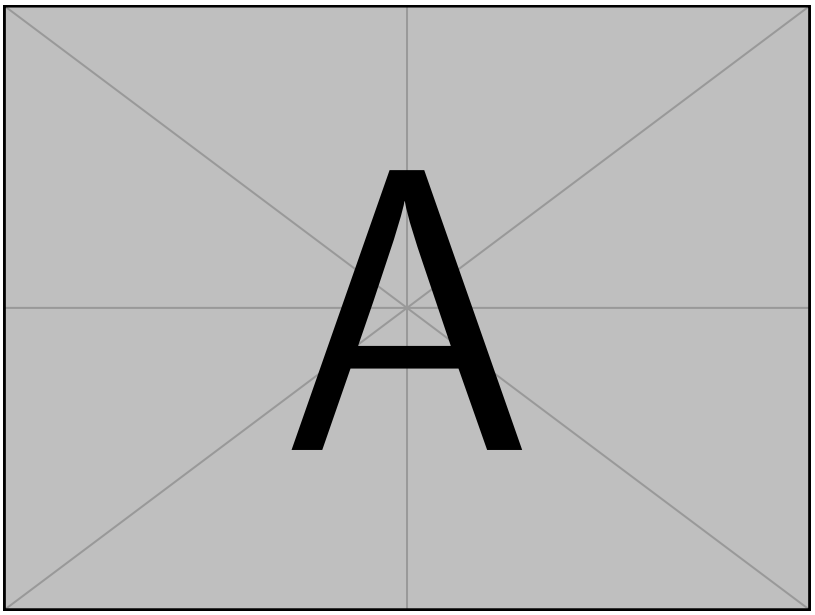
5.1.1 Configurations

Q5.1.1

5.1.2 Plots

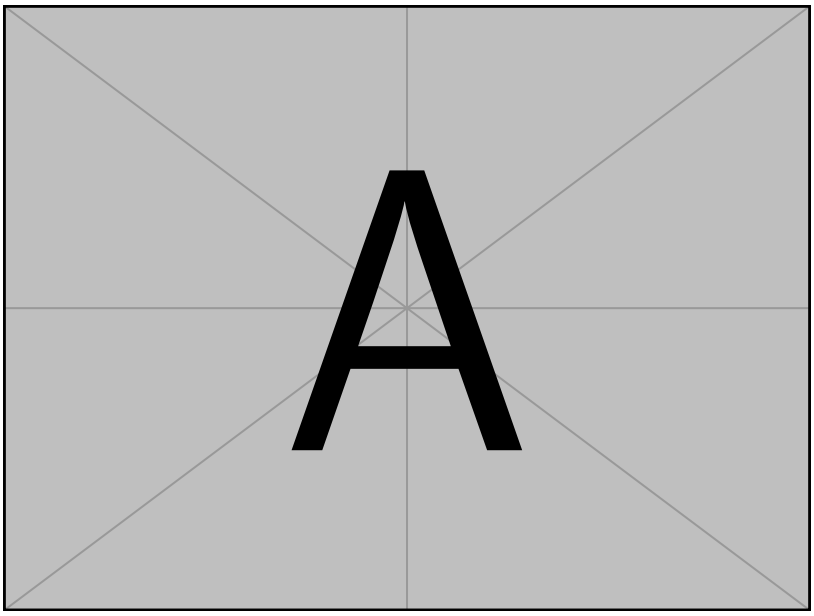
5.1.2.1 Small batch – [5 points]

Q5.1.2.1



5.1.2.2 Large batch – [5 points]

Q5.1.2.2



5.1.3 Analysis

5.1.3.1 Value estimator – [5 points]

Q5.1.3.1

5.1.3.2 Advantage standardization – [5 points]

Q5.1.3.2

5.1.3.3 Batch size – [5 points]

Q5.1.3.3

5.2 Experiment 2 (InvertedPendulum) – [15 points total]

5.2.1 Configurations – [5 points]

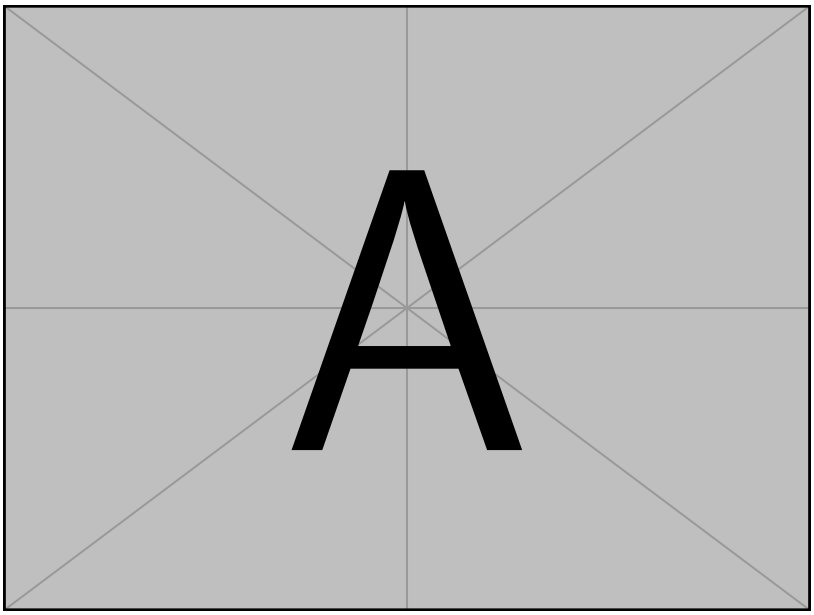
Q5.2.1

5.2.2 smallest b* and largest r* (same run) – [5 points]

Q5.2.2

5.2.3 Plot – [5 points]

Q5.2.3



7 More Complex Experiments

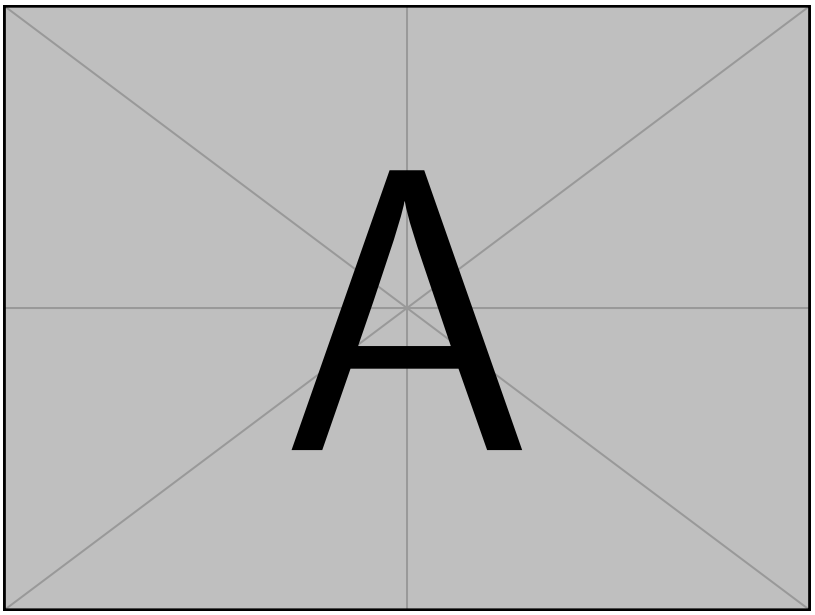
7.1 Experiment 3 (LunarLander) – [10 points total]

7.1.1 Configurations

Q7.1.1

7.1.2 Plot – [10 points]

Q7.1.2



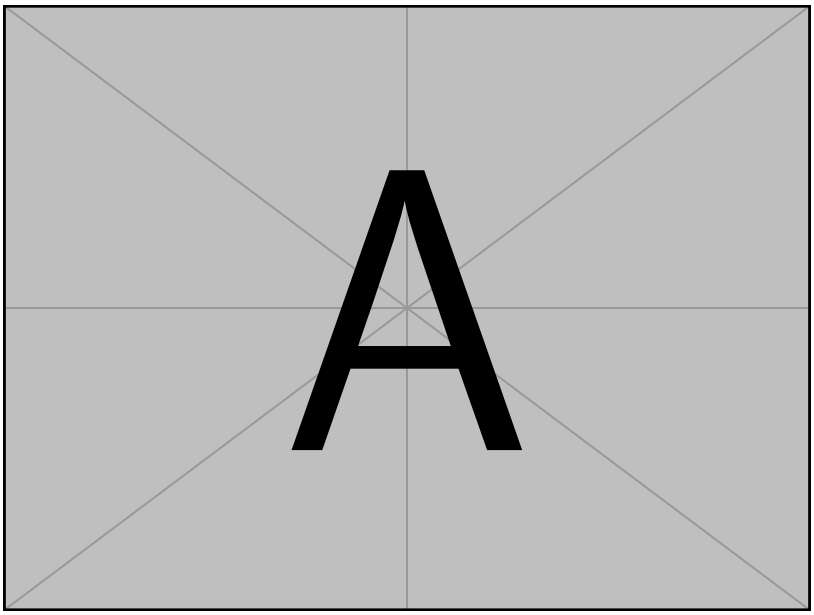
7.2 Experiment 4 (HalfCheetah) – [30 points]

7.2.1 Configurations

Q7.2.1

7.2.2 Plot – [10 points]

Q7.2.2

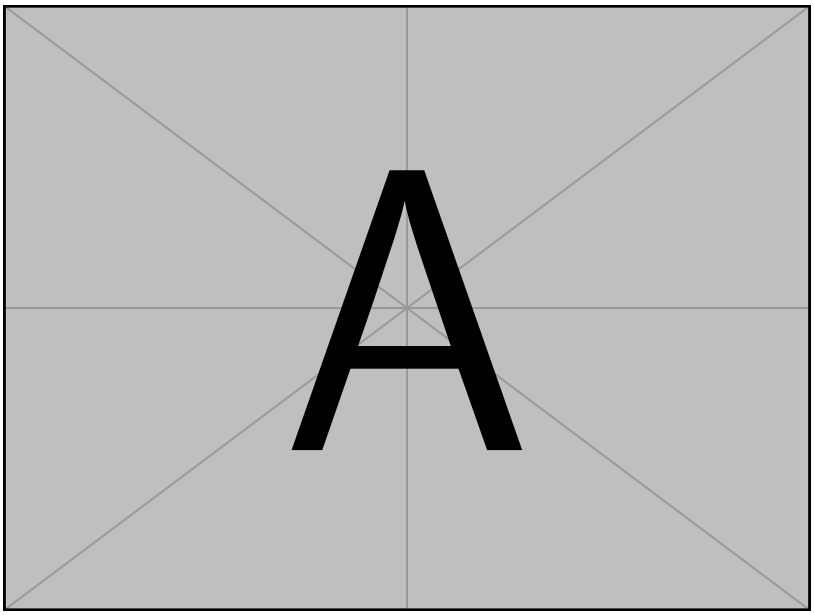


7.2.3 (Optional) Optimal b* and r* – [3 points]

Q7.2.3

7.2.4 (Optional) Plot – [10 points]

Q7.2.4



7.2.5 (Optional) Describe how b* and r* affect task performance – [7 points]

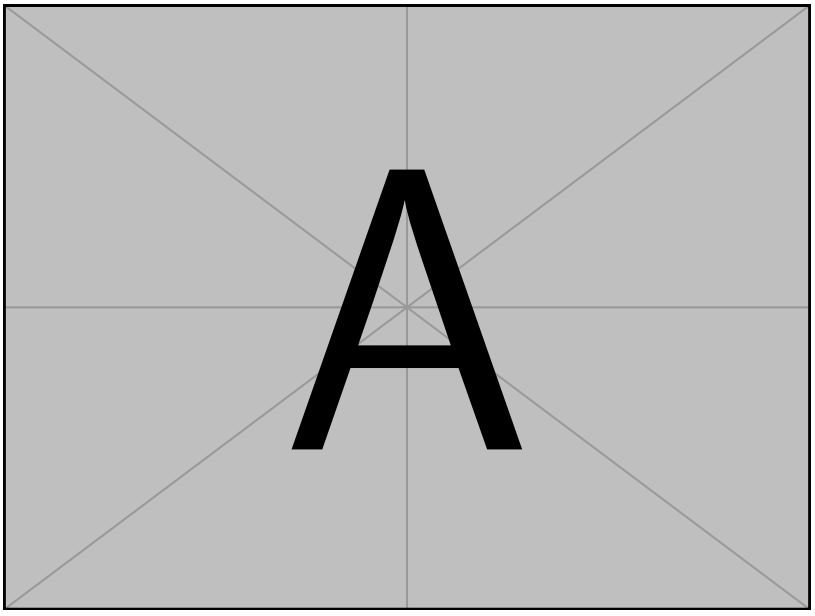
Q7.2.5

7.2.6 (Optional) Configurations with optimal b* and r* – [3 points]

Q7.2.6

7.2.7 (Optional) Plot for four runs with optimal b* and r* – [7 points]

Q7.2.7



8 Implementing Generalized Advantage Estimation

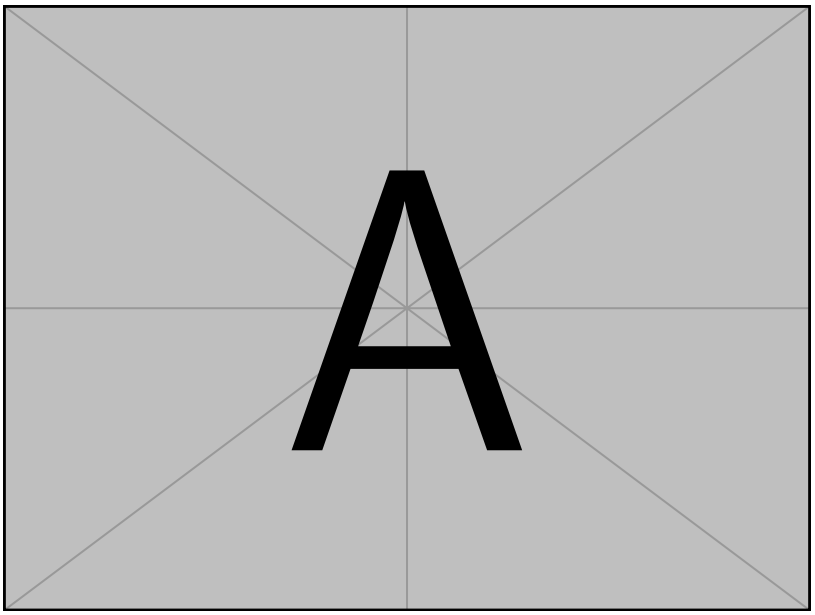
8.1 Experiment 5 (Hopper) – [20 points]

8.1.1 Configurations

Q8.1.1

8.1.2 Plot – [13 points]

Q8.1.2



8.1.3 Describe how λ affects task performance – [7 points]

Q8.1.3

9 Bonus! (optional)

9.1 Parallelization – [15 points]

Q9.1

Difference in training time:

9.2 Multiple gradient steps – [5 points]

Q9.1