Short Questions 1

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Question 1

What is reinforcement learning? Compare it briefly with supervised and unsupervised learning.

Sutton and Barto describe reinforcement learning (RL) as "a third machine learning paradigm, alongside supervised learning and unsupervised learning" (Sutton and Barto 2018). In supervised learning, a human labels data ahead of time, telling the system the "right answer" for each example (Morales 2020). Unsupervised learning finds hidden patterns in unlabeled data without any feedback. RL is different: an agent takes actions in an environment, receives rewards as feedback, and learns a policy to maximize cumulative reward over time. The key distinction is that RL feedback is delayed and there is no teacher providing correct answers—only better or worse outcomes. An RL agent must also balance *exploration* of new actions with *exploitation* of known good ones, a tradeoff that "does not even arise in supervised and unsupervised learning" (Sutton and Barto 2018).

Question 2

What are at least five publication venues where you are likely to find recently authored high-quality papers on reinforcement learning?

Finding quality research means knowing where to look. Based on Google Scholar's H5-index rankings for artificial intelligence, five top venues for reinforcement learning papers are: (1) **ICML**, the International Conference on Machine Learning (H5: 272), which publishes foundational work on RL theory and algorithms; (2) **AAAI**, the Association for the Advancement of Artificial Intelligence conference (H5: 232), covering RL applications in planning and robotics; (3) **IEEE Transactions on Neural Networks and Learning Systems** (H5: 165), a high-impact journal for neural network-based RL research; (4) **IJCAI**, the International Joint Conference on Artificial Intelligence (H5: 136), the oldest AI conference (established 1969) with broad RL coverage; and (5) the **Journal of Machine Learning Research** (H5: 130), a respected open-access journal that has published seminal RL algorithms. These venues consistently feature cutting-edge reinforcement learning research and are recognized by the research community as top-tier outlets.

AI Use Statement

Claude (Anthropic) was used to format my answers in AAAI LaTeX format and to retrieve H5-index rankings from Google Scholar Metrics.

References

Morales, M. 2020. *Grokking Deep Reinforcement Learning*. Shelter Island, NY: Manning Publications. ISBN 978-1617295454.

Sutton, R. S.; and Barto, A. G. 2018. *Reinforcement Learning: An Introduction*. Cambridge, MA: MIT Press, 2nd edition. Available free at http://incompleteideas.net/book/the-book-2nd.html.