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Applied Reinforcement Learning – Journal

# Module 1 – RL Fundamentals

In this module, we reviewed the fundamentals of reinforcement learning, including how it differs from other fields in machine learning. My biggest takeaway was the interaction between the agent and the environment – this is the fundamental difference between reinforcement learning and supervised/unsupervised learning. With that in mind, defining the reward that the agent receives for its various interactions with the environment seems to be the key piece that makes a model valuable. This also intuitively makes it difficult to build an agent for a driverless car, for example, as the reward function has to define something like staying on the road, \*not\* getting into an accident, and keeping all the passengers comfortable – which is more complicated than building an agent to win a game of checkers, where every action contributes to the desired outcome of defeating the opponent.

I think it may be challenging in many applications to keep the agent from taking the greedy choice every time, thus reducing the long-term value. I am very excited to learn the strategies for achieving this, as it seems like such a human thing to do – making a plan to achieve a goal in the long term by sacrificing short-term rewards.