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From Markov chains to Markov decision processes

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Abstract

In this bachelor's thesis we will try to build an understanding of Markov decision processes as an extension to ordinary discrete time Markov chains in an informal setting. The intended reader is assumed to have knowledge of basic probability theory. Throughout the text we use trivial examples of applying the theory, which we believe builds good intuition. As a last section we show how a basic Reinforcement learning algorithm, namely Q-learning, can be used to find a solution of an MDP-problem.

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