

Virtual military robot controlled by emotical agents using reinforcement learning*

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Abstract

Remote controlled and (later) intelligence driven military devices have been existed for a long time. Probably in the future wars robots will fight each other instead of soldiers avoiding human casualties. An abstract view of the tank's battles are the Jrobots competition in which two or more virtual tanks fight against each other. These virtual robots are programmed in advance (in Java language) using built in heuristics in order to win. However these programmed artificial intelligencies can be exceeded by machine learning methods. In this talk I introduce an emotical agent which learns the optimal strategy and therefore the optimal emotion using the reinforcement learning method called SARSA(λ). Using three different behavior - called emotions - which are pre-programmed basic heuristics the agent can defeat a more complex artificial agent (which defeated the behaviors one by one).

Keywords: Reinforcement Learning, SARSA(λ), Emotical agent, Neurotic agent, JRobots, Artificial Intelligence

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