

Cooperation in Multi-Agent Reinforcement Learning

Advances in Multi-Agent Reinforcement Learning (MARL) have led to the development of efficient agents capable of solving practical tasks. A key aspect of MARL is cooperation, wherein agents must collaborate with each other to achieve complex objectives. The need for cooperative agents is further highlighted in the case of partially-observed settings wherein agents have access to a limited set of observations from the environment.

The work aims to explore the cooperative setup of MARL from a Game Theoretic viewpoint. The central objective of the project is to understand the behavior of agents in environments with large action spaces and spurious opponents. The proposed objective is by implementing and assessing the behavior of state-of-the-art Q-learning algorithms in MARL; namely QMIX, QMIX-SMiRL, Value Decomposition Networks (VDNs) and Independent Q-Learning (IQL).

References