

**Title:** A Study on Reinforcement Learning: Q-Learning and SARSA Machine Algorithm on Multiagent System

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## **ABSTRACT**

Artificial Intelligence has already been used for many years in experimenting on new technologies trying to imitate human interactions in the world. It is one of the most used and popular methods in various paperwork applications today. It can be implemented in software and even in android applications. It is one of the used methods nowadays to predict futuristic events. Artificial intelligence can make improvements to human's daily living. However, artificial intelligence its accuracy varies. Also, artificial intelligence can be used in game platforms. It can be 1-dimensional, 2-dimanesional, or multi-dimensional game applications. Q-Learning and SARSA machine algorithms is integrated to supervise the agent's field of work. The researchers reinforced the two algorithms to help improve the agent's performance. With the completion of this study, the application of both algorithms may open new opportunities for future innovations.

**Keywords:** Interactions between agents. Artificial Intelligence, Machine Learning, Q-learning Algorithm, SARSA Algorithm, Multiagent, Rewards, Policy, State, Action, Multitask Reinforcement Learning.