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(57) Abstract :
ADAPTIVE REINFORCEMENT LEARNING: DYNAMIC POLICY UPDATING FOR CONTINUOUS LEARNING IN COMPLEX ENVIRONMENTS ABSTRACT This patent pertains to a system and method for adaptive reinforcement learning designed to enable autonomous agents to operate effectively in complex and dynamic environments. The system 100 employs a dynamic policy updating module 104 that continuously adjusts an agent's 102 decision-making policy based on real-time feedback and environmental changes. Utilizing a reinforcement learning algorithm 106, including deep reinforcement learning neural networks, the system 100 optimizes the agent's 102 behavior and responses to evolving environmental conditions. Sensory data collected from the environment informs these policy updates, with a reward function guiding the agent's 102 learning process. The dynamic policy adaptation allows for enhanced performance and adaptability, making it suitable for a wide range of applications, from autonomous robotics to industrial automation. This innovative system addresses the challenges of continuous learning in complex environments, providing significant advancements in the field of reinforcement learning.

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