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DEPLOYMENT OF DEEP REINFORCEMENT LEARNING ALGORITHMS ON PHYSICAL ROBOTIC SYSTEMS

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ABSTRACT

In the recent years, Reinforcement Learning (RL), has surfaced as an impressive tool for solving complex sequential decision-making problems in control theory. Its major grasp on control theory has been on Markov decision problems (MDP) and its variants. It overcomes the long observed problems of the curse of dimensionality and the curse of modeling. This outperforms the classical Dynamic Programming (DP) that falter under these curses. The work is to use this advantage in our favour to leverage autonomous navigation in a model learnable environment or otherwise.

The work involves the use of a Meta OS called Robot Operating System and Gazebo for the purpose of implementing RL algorithms on a wheeled robot with sensory feedback.

Keywords: *reinforcement learning, machine learning, robot operating system, robotics*