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Robot Movement Using the Trust Region Policy Optimization

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Abstract : The Policy Gradient approach is one of the deep reinforcement learning families that combines deep neural networks (DNN) with reinforcement learning RL to discover the optimum of the control problem through experience gained from the interaction between the robot and its surroundings. In contrast to earlier policy gradient algorithms, which were unable to handle these two types of error because of over-or under-estimation introduced by the deep neural network model, this article will discuss the state-of-the-art SOTA policy gradient technique, trust region policy optimization (TRPO), by applying this method in various environments compared to another policy gradient method, the Proximal Policy Optimization (PPO), to explain their robust optimization, using this SOTA to gather experience data during various training phases after observing the impact of hyper-parameters on neural network performance.

Keywords : deep neural networks, deep reinforcement learning, proximal policy optimization, state-of-the-art, trust region policy optimization
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