Summary: In the field of robotic control, it is appealing to solve complicated control tasks through deep learning techniques. However, collecting enough robot operating data to train deep learning models is difficult. Thus, in this paper a transfer approach based on progressive neural network (PNN) and deep deterministic policy gradient (DDPG) is proposed. By linking the current task model and pretrained task models in the model pool with a novel structure, the control strategy in the restrained task models is transferred to the current task model. Simulation experiments validate that, the proposed approach can successfully transfer control policies learned from the source task to the current task. Compared with other baselines, the proposed approach takes remarkably less time to achieve the same performance in all the experiments.

MSC:

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