SvgAI – Training Artificial Intelligent Agent to use SVG Editor

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***Abstract*— Deep reinforcement learning has been successfully used to train artificial intelligent (AI) agents to outperform humans in many tasks as well as to enhance the capability in robotic automation. In this paper, we propose a framework to train an AI agent to use scalable vector graphic (SVG) editor to draw SVG images. Hence, the objective of this AI agent is to draw SVG images that are similar as much as possible to their target raster images. We find that it is crucial to distinguish the action space into two sets and apply a different exploration policy on each set during the training process. Evaluations show that our proposed dual-exploration policy greatly stabilizes the training process and increases the accuracy of the AI agent. SVG images produced by the proposed AI agent also have superior quality compared to popular raster-to-SVG conversion software.**

***Keyword*— SvgAI, Reinforcement Learning, SVG, Exploration Policy, Q-Learning**

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