

Evolutionary strategies represent one of approaches to solve reinforcement learning tasks. This thesis explores two modern evolutionary strategies, namely OpenAI-ES and NS-ES (and extensions) utilizing novelty search. The performance of these algorithms is studied in two benchmark reinforcement learning environments, Cartpole-swingup and Slimevolley. On Cartpole-swingup most approaches are able to solve the problem successfully, while the performance on the Slimevolley task is volatile and sensitive to initial seed, in comparison to more traditional approaches, such as CMA-ES.