Special Issue

Algorithms in Evolutionary Reinforcement Learning

Message from the Guest Editors

Recent years have witnessed a surge in the number of novel approaches to reinforcement learning based on evolutionary computation, forming the exciting research area of evolutionary RL. Due to their comparative advantages, including better exploration properties, such approaches are particularly promising in the context of RL tasks with sparse or deceptive rewards, ill-defined problems, and problems that require the generation of a large number of diverse solutions. Quality diversity approaches, such as MAP-Elites, provide a striking example. Further research is anticipated the bring the fields of RL and evolutionary computation even closer together, through both hybridisation and the transfer of ideas across the two fields. However, many issues remain, especially related to sample (in)efficiency, lack of consideration of the sequential structure of the underlying problem, evaluation of noisy functions, and scalability. This Special Issue presents an opportunity for researchers to showcase their novel research in the area of evolutionary reinforcement learning. Dr. Marko Djurasević

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Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

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