

Knowledge Learning-Driven Evolutionary Optimization

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Abstract

Learning and optimization are two key skills in human activity, and they are also two important ways through which artificial intelligence (AI) simulates human intelligence, giving rise to a series of learning and optimization algorithms. Evolutionary computation (EC) is a kind of powerful AI method for optimization. The EC simulates the evolutionary phenomenon and swarm intelligent behavior in nature, being promising in knowledge creation and problem solving. This talk will explore the synergy between learning algorithms and evolutionary algorithms in AI, focusing on how machine learning and knowledge acquisition can assist EC algorithms. This talk presents the Learning-aided Evolution for Optimization (LEO) and Knowledge Learning for Evolutionary Computation (KLEC). We hope such new EC paradigms can provide new ways for solving modern ultra-complex optimization problems and promote the new developments of EC and AI.



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