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Some Hybrid models to Improve Firefly Algorithm Performance

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Abstract

Firefly algorithm is one of the evolutionary optimization algorithms, and is inspired by the behavior of fireflies in nature. Though efficient, its parameters do not change during iterations, which is also true for particle swarm optimization. This paper propose a hybrid model to improve the FA algorithm by introducing learning automata to adjust firefly behavior, and using genetic algorithm to enhance global search and generate new solutions. We also propose an approach to stabilize firefly movement during iterations. Simulation results show better performance and accuracy than standard firefly algorithm.