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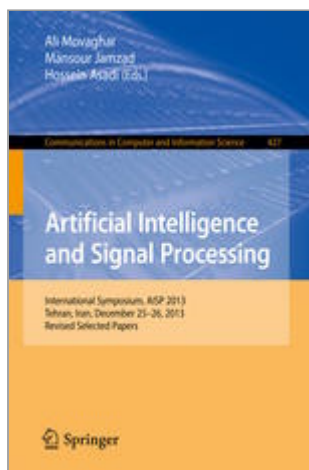
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Adaptive Parameter Selection in Comprehensive Learning Particle Swarm Optimizer

Abstract

The widespread usage of optimization heuristics such as Particle Swarm Optimizer (PSO) imposes huge challenges on parameter adaption. One variant of PSO is Comprehensive Learning Particle Swarm Optimizer (CLPSO), which uses all individuals' best information to update their velocity. The novel strategy of CLPSO enables population to read from exemplars for specified generations which is called refreshing gap m . In this paper, we develop two classes of Learning Automata (LA) in order to study the learning ability of automata for CLPSO refreshing gap tuning. In the first class, a learning automaton is assigned to the population and in the second one each particle has its own personal automaton. We also compare the proposed algorithm with CLPSO and CPSO-H algorithms. Simulation results show that our algorithms outperform their counterpart algorithms in term of performance, robustness and convergence speed.



Citations

Within this Chapter

1. Introduction
2. Comprehensive Learning Particle Swarm Optimizer (CLPSO) Versus Standard PSO
3. Learning Automata (LA) Representation
4. Proposed Algorithms
5. Numerical Simulation

6. Conclusion

7. References

8. References

Related Content



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