Memory/search RCLA-EC: A CLA-EC for moving parabola problem

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ABSTRACT

Many optimization problems in real world are dynamic in the sense that the global optimum value and the shape of fitness function may change with time. The task for the optimization algorithm in these environments is to find global quickly after the change in environment is detected. In this paper, we propose a new model of memory based CLA-EC which addresses this issue. The main idea behind our approach is to utilized local interactions in cellular automata, explored the benefit of a memory and split the population of the individuals in to two groups across the environment. Dynamic parabolic function is a simple dynamic function, which is used to evaluate optimization algorithms in dynamic environments. Experimental results show that M/SRCLA-EC outperforms M/SSEA, a well known evolutionary model in literature, both in accuracy and complexity in moving parabola problem.

INDEX TERMS

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