

عنوان مقاله:

The Application of Imperialist Competitive Algorithm to Automated Test Data Generation

محل انتشار:

چهارمین کنفرانس بین المللی پژوهش های کاربردی در مهندسی کامپیوتر و پردازش سیگنال (سال: 1395)

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خلاصه مقاله:

Debugging and testing are important and critical activities of the software development and maintenance process. A challenging part of this phase entails the generation of test cases that satisfy a given adequacy criterion. In this paper a new approach, Imperialist Competitive Algorithm (ICA), is used optimal automated test cases generation. We present a new fitness evaluation method based on Cosine distance. At the end, regard to this matter that most of the researches work focuses on deriving the input by random consideration for program slicing criterion and in most of the slicing methods, just one program execution is studied which is not enough for perfect comprehension of program and if many executions are studied, then repeated executions may be studied frequently proportional to input data which leads to iteration, taking a longest period of time and lack of efficient debugging, the generated optimal test cases are used as input component of dynamic slicing criterion for generating a set of slices per each program path which is more efficient for debugging. The results obtained suggest that the used method can play an important role in test case generation, reducing the cost of software testing and resulting in more efficient testing of software products.

کلمات کلیدی:

Automatic Test Case Generation, Path coverage, Imperialist Competitive Algorithm, Program Slicing

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