Abstract

As the applications of systems are increasing in various aspects of our daily life, it enhances the complexity of systems in Software design (Program response according to environment) and hardware components (caches, branch predicting pipelines). Within the past couple of years the Test Engineers have developed a new testing procedure for testing the correctness of systems: namely the evolutionary test. The test is interpreted as a problem of optimization, and employs evolutionary computation to find the test data with extreme execution times. Evolutionary testing denotes the use of evolutionary algorithms, e.g., Genetic Algorithms (GAs), to support various test automation tasks. Since evolutionary algorithms are heuristics, their performance and output efficiency can vary across multiple runs, there is strong need a environment that can handle these complexities, Now a day's MATLAB is widely used for this purpose. This paper explore potential power of Genetic Algorithm for optimization by using new MATLAB based implementation of Rastrigin's function, throughout the paper we use this function as optimization problem to explain some key definitions of genetic transformation like selection crossover and mutation.
References

- Papadamou, S. and Stephanides, G., A New Matlab-Based Toolbox For Computer Aided Dynamic Technical Trading,
- A Comparison of C, MATLAB, and Python as Teaching Languages in Engineering Hans Fangohr University of Southampton, Southampton SO17 1BJ, UK.

Index Terms

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Keywords

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