Abstract

Testing is the process to check the program with the aim to detect errors. Software testing is an expensive and challenging process, typically consuming at least 50% of the total development cost and 35% of total development time. The critical step of software testing is automated test data generation. Automated test data generation scheme generate optimum set of test data automatically on the basis of test data adequacy criteria. The goal of this contribution is to summarize the major techniques in recognizing the automated test data generation. The main objective of this paper is to look into the current research in the automated test data generation, various metaheuristics techniques (ACO, PSO, GA, SA etc.) and hybridization of these metaheuristics techniques (ACSGA, GAPSO etc.) all these topics have been discussed so far to mitigate the errors in the software.

References

Survey on Automated Test Data Generation

- Praveen Ranjan Srivastava, Km Baby "Automated software testing using metahuerestic technique based on an Ant Colony Optimization" Electronic System Design (ISED), 2010 International symposium.
- Sheng Zhang, Ying Zhang, Hong Zhou, Qingquan He "Automatic Path Test Data Generation Based on GA-PSO" IEEE, 2010.
- Rui Ding, Xianbin Feng, Shuping Li, Hongbin Dong "Automatic Generation of Software Test Data Based on Hybrid Particle Swarm Genetic Algorithm" IEEE Symposium on Electrical & Electronics Engineering (EEESYM), 2012.
- Nirmal Kumar Gupta and Mukesh Kumar Rohil "Improving GA based Automated Test Data Generation Technique for Object Oriented Software" 3rd IEEE International Advance Computing Conference (IACC), 2013.

Index Terms

Computer Science  
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Keywords

Software testing  Automated Test Data Generation  ACO  PSO  GA  Hybrid Algorithm.