

Adaptive Random Testing: Ubiquitous Testing to Support Ubiquitous Computing

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- Abstract -

Computing is everywhere, and software is too, but what about the quality of this software? As the vision of Ubiquitous Computing becomes closer and closer to a reality, what can we do to ensure the quality of the software behind the Ubiquitous Computing? The process of Software Testing, one method of assuring Software Quality, is often omitted from the development and implementation of computer systems, sometimes because of its perceived inconvenience and difficulty. An easy way of testing software is to apply test cases (combinations of input representing a single use of the software) randomly, a method known as Random Testing. Some research has indicated that more widespread distributions of test cases throughout the input domain may be more effective at finding problems in the software.

Adaptive Random Testing methods are Software Testing methods which are based on Random Testing, but which use additional mechanisms to ensure more even and widespread distributions of test cases over an input domain. This paper gives a brief introduction to some of the major Adaptive Random Testing implementations.