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In this issue

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This issue contains three regular papers and a special section. The first two regular papers are united by the common theme of software testing, whereas the third regular paper is concerned with hypothesis testing in empirical software engineering.

In "Applying Black-Box Testing to UML/OCL Database Schemas," Harith Aljumaily, Dolores Cuadra and Paloma Martínez describe how to validate UML class diagrams using black-box testing. The method uses automatic transformation of the constraints from a UML class diagram into the necessary test cases. The effectiveness and efficiency of the method are demonstrated using ten class diagrams from different domains. The diagrams were seeded with semantic faults by mutating the OCL constraints. Test effectiveness was shown to increase linearly with the number of test cases. The authors discuss the efficiency problems that can arise due to the NP-complete nature of constraint solving. They suggest how to mitigate this problem using heuristics. This work represents an important contribution to the automation of software testing.

Aspect-oriented software testing has recently emerged as an important testing technique. In "Using Aspects for Testing of Embedded Software: Experiences from Two Industrial Case Studies," Jani Metsä, Shahar Maoz, Mika Katara and Tommi Mikkonen describe two studies in which aspects were used to test embedded software in industry. The authors show how it is possible to create tests for non-functional requirements using their technique. This work helps to raise the level of abstraction for automated testing.

Hypothesis testing is often used in empirical software engineering during formal experiments. In "Equivalence Hypothesis Testing in Experimental Software Engineering," Jose Javier Dolado, Maria Carmen Otero and Mark Harman introduce the concept of equivalence hypothesis testing. This has the advantage of enabling researchers to statistically assess the equivalence of two software engineering methods, algorithms or techniques.

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The papers in the Special Section are also concerned with testing. I am very grateful to the guest editors, Hong Zhu, Daniel Hoffman, John Hughes and Dianxiang Xu for all the effort that they have invested in selecting, reviewing and improving the best papers to ensure that the Special Section is of the very highest quality.

As always, I do hope that you enjoy reading this issue.