

1st International Workshop on Testing Extra-Functional Properties & Quality Characteristics of Software Systems (ITEQS)

Co-located with ICST 2017, Tokyo

Submission Deadline: December 1st, 2016

Notifications: January 2, 2017

Workshop: March 12, 2017 (preliminary)

Full papers: 6-8 pages

Work-in-Progress/Position papers: 4 pages

Accepted papers are published by IEEE

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SCOPE

The rapid development towards increased integration of software with the social and physical world that we see today means that quality aspects such as performance, safety, security, and robustness become more important in an increasing number of the systems and devices, which we use and depend on. In this context, the success of a software product may not only depend on the logical correctness of its functions, but also on the system quality characteristics. Such system characteristics, which are referred to and captured as Extra-Functional Properties (EFPs) or Non-Functional Properties, are particularly important in resource constrained systems such as in the domains of real-time embedded and cyber-physical systems. Therefore, such systems need to be tested with a special attention to the EFPs. Testing EFPs is challenging and often requires different approaches compared to testing normal functionality. ITEQS provides a focused forum with the goal of bringing together researchers and practitioners to share ideas, identify challenges, propose solutions and techniques, and in general expand the state of the art in testing EFPs and quality characteristics of software systems and services. The workshop endorses contributions in a wide range of topics related to testing of EFPs in the form of full papers and short yet solid work-in-progress/position papers. The workshop does not accept papers that focus purely on functional testing!

TOPICS OF INTEREST

- Model-based testing of EFPs; e.g., choice of modeling languages to capture EFPs and their role on testability, model-based test case generation, etc.
- Mutation-based testing for EFPs; e.g., application of mutation techniques for testing of EFPs particularly introduction of EFP-specific mutation operators
- Search-based testing techniques for EFPs
- Testability, observability, and the role of the platform; e.g., how choosing an operating system can impact testability of EFPs, for instance, a real-time operating system, introducing testability mechanisms into a platform, designing middlewares for testing of EFPs
- Empirical studies and experience reports; e.g., on the importance of testing EFPs, evaluation of testing methods, case-study and reports on project failures due to EFPs, comparison of methods and techniques
- Quality assurance, standards, and their impact on testing EFPs
- Requirements and testing EFPs; e.g., identification and generation of test oracles for EFPs from requirements, requirements for testability, traceability
- Coverage criteria in testing EFPs
- Processes and their role in testing EFPs; e.g., agile and TDD
- Fault localization for EFPs and debugging
- Formal methods, model-checking, and reasoning about EFPs
- Parallelism, Concurrency, and Testing of multicore applications
- Performance, Robustness, and Security Testing
- Testing real-time, embedded, and cyber-physical systems, and their challenges
- Testing quality characteristics of distributed, mobile, and cloud applications

ORGANIZATION

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