27th INTERNATIONAL CONFERENCE ON EMERGING TECHNOLOGIES AND FACTORY AUTOMATION

ETFA 2022

STUTTGART, GERMANY
SEPTEMBER 6th-9th 2022

Call for Papers
Intelligent Testing of Automated and Autonomous Systems

Organized and Co-Chaired by
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❖ **FOCUS**. Testing is critical for high-quality products. At the same time, testing methods and tools often lag behind the technical sophistication of their device-under-test counterparts. While the use of artificial intelligence and a very high level of intelligent automation are becoming the new normal, testing efforts are increasing and for industrial software development, test is a major lever to reduce cost and at the same time improve quality. For instance, more than one third of test cases are overlapping and redundant, while at the same time, critical features are not tested. Therefore, testing methods, processes and tools need to be updated to keep pace.

❖ **TOPICS**

Creating a digital basis for testing, applying Digital Twins for validation:
- ❖ The role of semantic modelling for testing
- ❖ Benefits of Digital Twins for testing
- ❖ Automatic scenario-driven simulation
- ❖ Reusable, simulator-independent asset, scene and scenario modelling

Reduce test effort - prioritize and automate properly:
- ❖ Assisted transparent and automated corner case identification
- ❖ Data-driven analysis of test results
- ❖ Support for efficient regression testing
- ❖ Testing of frequently reconfigured manufacturing systems
- ❖ AI-driven test automation, focus on test case generation and test execution

❖ **AIM.** The challenges of overwhelming test effort need to be addressed through the use of new technologies and tools. Digital Twins and the accompanying focus on simulation change how systems and products are engineered and operated. The usage of automated, AI-based tools on the other hand improve complexity management. AI helps to analyze test cases to improve the selection of adequate scenarios. Furthermore, AI is needed to efficiently automate testing It enables automatic generation of appropriate test cases for verification as well as the reuse of test harnesses in case of regression testing.

❖ **WORKSHOP FORMAT**. In the workshop, we want to bring together practitioners and researchers on Sept. 6, 2022 and provide them with a platform to discuss recent advances and future possibilities in the field of intelligent testing. Original research work is presented which must be submitted to ETFA according to all submission guidelines. Prospective authors are invited to electronically submit full regular papers (3 to 8 pages) of their work. English is the working language of the conference. Accepted papers must be presented at the workshop in order to be included in the ETFA conference proceedings available at IEEE Xplore.

❖ **AUTHOR'S SCHEDULE (2022)**

Submission deadline	May 13
Acceptance notification	June 10
Deadline for final manuscripts	June 24

Workshop: September 6, 2022

Workshop Program Committee

- ❖ **Christof Ebert, Vector Consulting Services GmbH**
- ❖ **Andreas Löcklin, University of Stuttgart**
- ❖ **Daniel Siegrist, SEW Eurodrive GmbH & Co KG**
- ❖ **Markus Rentschler, Murrelektronik GmbH**
- ❖ **Christian Schleicher, Festo SE & Co. KG**
- ❖ **Valentin Stegmaier, Schmalz GmbH**
- ❖ **Janos Abonyi, University of Pannonia**
- ❖ **Stefan Kowalewski, RWTH Aachen**
- ❖ **Marcus Völker, RWTH Aachen**
- ❖ **Christian Facchi, TH Ingolstadt**
- ❖ **Franz Listl, Siemens AG**
- ❖ **Gary Hildebrandt, University of applied sciences Pforzheim**
- ❖ **Kebron Welday, TK Elevator GmbH**
- ❖ **Daniel Mörsch, TK Elevator GmbH**