



Call for Papers

15th Workshop on Dependability and Fault Tolerance (VERFE 2019)

in conjunction with 32nd ARCS 2019, Copenhagen, Denmark, May 20th – 23rd, 2019

Background and Focus Although the basic reliability of hardware and software components has improved over decades, their increasing number causes severe problems. Moreover, in recent years it can be observed that an increasing number of devices are integrated into environments of other physical components such as cars or digital systems. Here, the complexity and number of interactions with these components creates problems with regard to maintaining a dependable operation of the entire system in case of faults or external disturbances. While this is not a problem with microprocessors, shrinking feature sizes, higher complexity, lower voltages, and higher clock frequencies increase the probability of design-, manufacturing-, and operational faults, making fault tolerance techniques in general purpose processors to be of crucial importance in the future. As simple solutions (such as TMR) can easily get too expensive, the ability to trade increased reliability against performance/power overhead will become important, resulting in light-weight fault tolerance techniques implemented in hardware, but controllable from higher software layers.

This workshop aims at presenting contributions and work-in-progress from the research area of dependable and fault-tolerant computing in order to bring together scientists working in related fields.

Topics Contributions on the topic of “Dependable Embedded Systems” are of particular interest; contributions on general topics of dependability and fault tolerance are also welcome but not limited to:

- reliability models for hardware and software
- modeling and simulation of fault-tolerant systems
- fault-tolerant systems and system components
- testing of hardware and software
- failure prediction and fault treatment
- detection and correction of transient faults
- quantitative assessment of reliability improvements
- safety-critical applications
- timeliness problems
- dependability of networks
- dependability of embedded systems
- highly available systems
- dependable organic computing
- self-organization within redundant systems
- dependable ubiquitous and pervasive computing
- composability of dependable systems
- dependable mechatronic systems / micro systems
- dependability of mobile and wireless systems
- robustness and robustness metrics
- validation and verification
- fault models and fault abstraction
- fault injection techniques
- software-controlled fault tolerance
- on-chip backward recovery techniques (e.g. pipeline flush and re-execution)
- forward recovery techniques (notification of higher layers)
- fault-tolerant caching mechanisms
- dynamic re-use of currently unused resources in processors for fault-tolerance

The workshop will focus on research presentations as well as brainstorming sessions.

Therefore, two kinds of contributions are welcome:

- research papers documenting results of scientific investigations and
- position papers proposing strategies or discussing open problems.

Informations for Authors

Accepted papers will be published by VDE and IEEEExplore.

Papers should be in English and formatted according to IEEE eXpress "conference mode".

Selected papers will appear in the FERS Journal (ISSN **0724-5319**).

Deadlines:

Submission: **January 25th, 2019** (extended abstracts (3-4 pages) or full papers, PDF) to:
bernhard.fechner@fernuni-hagen.de

Notification: **February 11th, 2019**

Camera-ready: **March 1st, 2019** (max. 8 pages)

Workshop: **May 20th or 21st, 2019**

Workshop site: <http://arcs2019.itec.kit.edu/downloads/VERFE.pdf>

Workshop Chairs

Bernhard Fechner	University of Hagen	Germany
Karl-Erwin Großpietsch	St. Augustin	Germany

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