CALL FOR PAPERS

7th International Workshop on
Theory of **R**eliability and **M**arkov Modeling for **I**nformation **T**echnologies
(WS TheRMIT 2021 at the 17th International Conference ICTERI2021)
http://icteri.org/icteri-2021/workshops-calls-for-papers/thermit-2021/

Background

Increased dependence of safety, security, mission and business critical systems reliability and availability on dependability of software, hardware and firmware components, information and communication technologies (IT) as a whole is one of the most important challenges of the last decade. This dependency becomes more complex in Covid-19 time. There is a gap between researchers of mathematical methods for reliability, safety, security and dependability, on the one side, and engineers who develop critical systems, auditors who assess and assure dependability during life cycle stages, on the other side. Academic researchers do not take into account the changing requirements, environment and restrictions of engineering practice as it's needed. Engineers are concerned with assurance of reliability for developed systems according to specifications and standards. There are not approved assessment techniques for software reliability, dependability of cloud and IoT computing, data centers and AR/VR applications, Big Data and predictive analytics applicability for safety and security critical domains, and so on. We would like to invite researchers, engineers and experts to discuss problems of application of modern theory of reliability and safety, Markov's models and other mathematic methods for more accurate assessment and creation of dependable and resilient IT systems.

Key topics

The 7th WS TheRMIT focus on:

- modern information technologies, systems and IT-infrastructures as objects of reliability, dependability, safety, security and resilience regulation, modeling, assessment and assurance;

- methods for cyber security and safety assurance of industrial systems in context Industry 4.0;

- application of software tools for IT reliability analysis and assessment, decision supporting/making on development of dependable systems;

Key domains are safety, security, mission and business critical IT and systems. The main topics for discussion on the WS agenda include, but are not limited to the following:

• Standards, regulation and taxonomy of reliability, dependability and resilience, safety and cyber safety, security and cybersecurity: Which are new challenges and requirements to the IT-components, systems and infrastructures attributes assessment?

• Methodological aspects of reliability and safety theory, dependable computing, Markov's models and other mathematical methods for development, operation and reengineering of IT systems: What are new approaches, industry and business related issues in context of pandemic time?

• Artificial intelligence, digital twins, predictive analytics and maintenance for assurance of cybersecurity of industrial systems in conditions of implementing Industry 4.0. Analysis of industrial cases. Which methods, techniques and tools can be applied now and in post Covid-19 time?

- Balancing of performance, reliability, power consumption and security for embedded and distributed systems: How to choice the technique for providing sustainable development of IT and IT-systems?

- Software quality, reliability, security and dependability of software and software-based systems: How probabilistic or deterministic, BD and AI based methods can be applied and embedded into business processes and tools?

- Availability and resilience of large-scale distributed systems and IoT computing. How the problems of evolvability, complexity and uncertainty can be taken into consideration?

- Markovian chain-based techniques and tools (T&T) for assessing of high availability IT-systems: How to choice techniques and tools to assure accuracy, stability and effectiveness of assessment for complex and high available systems?

The proposed topics of WS panel discussion: Big safety and global trusted dependability in Covid-19 time: challenges, conceptions and techniques for assessment and assurance.

The WS will continue interesting discussions and presented outcomes of the previous WSs TheRMIT (http://www.icteri.org/workshop-TheRMIT2015, http://icteri.org/workshop-TheRMIT2016, http://www.icteri.org/workshop-TheRMIT2017, http://icteri.org/workshop-TheRMIT2018, http://icteri.org/workshop-TheRMIT2019 and http://icteri.org/workshop-TheRMIT2020), held in frameworks of ICTERI2015-ICTERI2020.

Submission Types and Requirements

The language of the WS is English as main ICTERI Conference. The following submission types are preferable (similar main track http://icteri.org/icteri-2021/submission-types/):
- regular and short research papers;
- short research papers;
- discussion, surveys or problems analysis papers;
- industry experience reports and case studies.

Accepted papers will be published in the Proceedings: CEUR-WS, indexed by Scopus. Evaluation criteria are equivalent to the ones of the main ICTERI Conference. Please refer to http://icteri.org/icteri-2021/evaluation-criteria/ and see instructions for paper submission http://icteri.org/icteri-2021/how-to-submit-your-paper/ for more details.

All accepted papers are presented at the WS by authors. At least one of the authors registers as the Participant of ICTERI and by that confirms that he or she will attend the conference and present their paper. The Program Chairs of the WS 2021 reserve the right to withdraw the papers which have not been presented at the WS from the proceedings of ICTERI 2021.

The best WS papers, among the accepted and presented at the conference, may be selected by the ICTERI steering committee and invited to be revised and extended for the ICTERI post-proceedings volume. The post-proceedings of ICTERI are traditionally published by Springer Communications in Computer and Information Science (CCIS) series. Post-proceedings is indexed by Scopus, DBLP, EI-Compendex, Mathematical Reviews, SCImago.

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- Prof Vladimir Zaslavskiy, Taras Shevchenko National University of Kyiv, Ukraine

Important dates

- Monday, 17.05.2021 – submission of Workshop Papers
- Monday, 28.06.2021 - acceptance notification for Workshop Papers
- Saturday, 28.08.2021 – submission of camera ready papers
- Saturday, 28.08.2021 – registration deadline for workshop authors
- Tuesday, 28.09.2021 – the WS day (TBC)

No Fees

The WS does not charge any conference fee. Participation is free, expenses are covered by ICTERI 2021 sponsors.