

WoSAR: The 13th International Workshop on Software Aging and Rejuvenation

October 25-28, 2021, Wuhan, China, co-located with [ISSRE 2021](#)

<https://wosar2021.com>.

Software aging is a problem of progressive degradation of performance and dependability in computer programs, especially those executing for long period of time. This phenomenon has been extensively studied for more than 20 years, as it affects many systems, from embedded devices to server software to critical systems.

Software rejuvenation, i.e. proactive restart of application (components/threads/task), reboot of VMs or machines, and failover to a replica are the most prominent approaches to combat software aging. A variety of rejuvenation techniques, scheduling plans, scope and granularity, have been proposed for different application types and platforms.

WoSAR is the premier international venue to discuss the recent advances and discoveries in theoretical and practical aspects of software aging and rejuvenation research. In this year, we encourage submissions targeting interdisciplinary research, in particular those listed in the topics of interest.

TOPICS OF INTEREST

This call for papers addresses all researchers and practitioners with an interest about performance and dependability degradation of software systems. Topics addressed in the workshop include but are not limited to:

- Progressive degradation of performability / availability / reliability / scalability / “-ilities” in software systems.
- On-line feedback control view of software rejuvenation.
- Modeling and characterization of the software aging phenomenon.
- Design and evaluation of rejuvenation techniques.
- Analysis of aging-related faults/bugs, errors, and failures.
- Software test strategies for detecting aging-related bugs.
- Monitoring, detection and data analysis of software aging effects (e.g., memory leaks, database index fragmentation, unterminated processes/threads, accrual of round-off errors, ...).
- New classes of software aging effects.
- Software aging and rejuvenation applied to anomaly detection and security intrusions, such as the evaluation of the impact of anomalous/malicious activities on software performance.
- Software aging and rejuvenation in Big Data and IoT Apps.
- Prognostics and Health Management (PHM) interactions with software aging and rejuvenation approaches.

- Environment dependent bugs and their mitigation techniques.
- Metrics for software performance and degradation.
- Fault localization and testing for aging-related bugs.
- Software refactoring for aging-related software problems.
- Clone detection in aging software.
- Machine learning techniques for aging-related bugs.
- Tools for detection and repair of memory leaks.
- Analytical, empirical, and experimental studies of any of the above topics.
- Software aging monitoring and Software rejuvenation techniques for unmanned vehicles like Drones or Cars
- Software aging and rejuvenation techniques for humans in safety critical environments, like large warehouses.
- Other software aging related phenomena, as for example, age of information.

For all the above topics, WoSAR is a unique forum to discuss the software aging and rejuvenation impacts on systems from different domains of applicability such as:

Cloud computing, Mobile Edge Computing, Fog computing, Mobile, Machine learning systems, Embedded, Medical, Cyber-physical systems, Cyber-Security, Industrial control systems such as SCADA, Smart Grids, Smart Infrastructures, Smart Cities, Transportation, Telecommunication, Military, System of systems, Databases, High Performance Computing, Software Defined Networks, and others.

IMPORTANT DATES

Paper submission deadline: July 15th, 2021

Paper notification: August 1st, 2021

Camera ready papers: August 15th, 2021

RESEARCH PAPER SUBMISSION

Authors are invited to submit high quality unpublished research work describing the results of theoretical and experimental software aging and rejuvenation research. All the accepted papers will be included in the IEEE Xplore Digital Library.

Papers must be written in English and be formatted according to the IEEE authoring guidelines¹. Full papers should not exceed seven pages in IEEE style. Paper submission will be done electronically through EasyChair².

¹ www.ieee.org/conferences_events/conferences/publishing/templates.html

² <https://easychair.org/conferences/?conf=wosar2021>

SPECIAL SESSION ON INVITED JOURNAL PAPERS

There will be a special session titled “Invited Journal Papers” at WoSAR 2021. During this session, researchers will have the opportunity to present any of their recently published peer-reviewed journal articles. For an article to be considered in this session, it must have been published between January 1, 2015 and August 15, 2021.

Researchers interested in presenting their work in this session, must send email to beto at esulabsolutions dot com with the following information, by 11:59 pm Pacific Time on July 15, 2021.

- 1) A copy of the refereed journal article
- 2) One paragraph description of the technical significance of this article in the fields related to SAR
- 3) Short biography of the presenting author

Authors, whose papers are selected, must be registered for the conference in order to present their paper. Note that the selected papers will **NOT** be reprinted nor archived by WoSAR 2021. Paper submission deadline: July 15th, 2021. Paper notification: August 1st, 2021

POSITION PAPER SUBMISSION

Authors are invited to submit position papers describing challenges and work in progress in software aging and rejuvenation research. All the accepted position papers will be included in the IEEE Xplore Digital Library.

Position papers must be written in English and be formatted according to the IEEE authoring guidelines. Position papers should not exceed four pages in IEEE style. Paper submission will be done electronically through EasyChair.

ORGANIZING COMMITTEE

Honorary General Co-Chairs:

Kishor S. Trivedi, Duke University, USA
Tadashi Dohi, Hiroshima University, Japan

General Chair:

Rivalino Matias, Federal University of Uberlandia, Brazil
Jianwen Xiang, Wuhan University of Technology, China

Program Committee Co-Chairs:

Alberto Avritzer, eSulabSolutions, USA
Xiaoyuan Xie, Wuhan University, China

Publication Chair:

Fumio Machida, University of Tsukuba, Japan

Publicity Co-Chairs:

Vasilis Koutras, University of the Aegean, Greece
Junjun Zheng, Ritsumeikan University, Japan
Jean Araujo, Federal University of Agreste of Pernambuco, Brazil
Fangyun Qin, Capital Normal University, China
Antonio Ken Iannillo, University of Luxembourg, Luxembourg
Javier Alonso, Amazon, USA
Ricardo M. Czekster, Newcastle University, UK

Finance Chair:

Artur Andrzejak, Heidelberg University, Germany

Web Master:

Xiaoting Du, Beihang University, China

