

Call for papers ! EXTENDED DEADLINE !

FRAME 2023 : 3rd Workshop on Flexible Resource and Application Management on the Edge

*Affiliated with the 32nd ACM International Symposium on High-Performance Parallel and
Distributed Computing (HPC) 2023
as part of the
ACM Federated Computing Research Conference (FCRC)*

Key deadlines:

27 March ~~20 March~~, 2023: Title and abstract submission

3 April ~~26 March~~, 2023: Submission of regular papers, projects and WIP papers

Website: <https://www.accordion-project.eu/frame2023/>

This year besides **regular**, **short**, and **work-in-progress** papers we open an additional session dedicated to **research projects!**

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Cloud computing architectures and related paradigms are gaining an ever increasing degree of popularity and interest both from the industrial and scientific community. They allow customers to “outsource” the management of physical resources by renting a variable amount of resources according to their actual needs, in a pay-per-use fashion. Research and technological efforts in this field keep expanding with the emergence of Edge computing infrastructures, as new problems and exploitation opportunities surface.

Cloud and Edge infrastructures can work together to fulfill requirements from a variety of applications, composing the so-called Cloud/Edge Continuum. Clouds must provide appropriate levels of performance to large groups of different users, whereas Edge resources act as a first layer of computing capacity that is close to the user, enabling reduced latency and increasing the exploitable portion of network bandwidth. Edge infrastructures typically belong to different administrative domains, are resource constrained with respect to central Clouds, and are composed of a very heterogeneous set of resources, introducing new challenges in the fields of security, orchestration and resource management.

From a business point of view, organizations can benefit from the distributed nature of Edge computing to deploy dedicated services on a context-driven, tenancy-driven or time-driven basis

to serve certain areas. From a technological perspective, the scalability, interoperability, and efficient (de-)allocation of resources at the edge can enable a whole new set of scenarios. Interactive and time-sensitive services can be extended toward the edge, thereby closing the proximity gap with (potential) users. Data collection can happen within geographically/administratively bounded areas, ensuring compliance with data privacy and data retention policies, as well as enabling pervasive and distributed security provisioning. Real-time data-driven decisions can be promptly taken on the spot, without the need to wait for data to travel to the Cloud and back, and allowing collaborative and interactive systems to perform live data processing fully exploiting the closest available devices. The immersive data processing of Extended Reality (XR) applications such as VR, AR and Holography is a key example where dynamically shifting computation towards the network edges can also allow for a better computation to communication tradeoff, smoother connections and improved perceived QoE and collaboration.

Improvement and innovation opportunities like these call for new solutions and theoretical frameworks. The 3rd International Workshop on Flexible Resource and Application Management on the Edge (FRAME 2023) aims at bringing together cloud and edge computing experts from academia and industry in order to identify new challenges, discuss novel systems, methods and approaches for the management of resources in cloud-edge infrastructures, as well as to promote this vision toward academia and industry stakeholders.

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Topics of interest

Topics of interest for the workshop include but are not limited to the following ones:

- Monitoring of Resources and Applications at the Edge
- Efficient management of storage at the Edge
- Lightweight virtualization tools and techniques for Edge devices
- Novel Computing and Data Architectures for the Cloud/Edge Continuum and Federations
- Efficient orchestration and Resources management for the Cloud/Edge continuum
- Adaptive management of Applications in the Cloud/Edge continuum
- Application Models for the Cloud/Edge continuum
- Edge OS approaches for hyper-distributed applications
- Fault detection and prevention in the Cloud/Edge continuum
- QoE/QoS modeling and assessment for the Cloud/Edge continuum
- ML/AI techniques and algorithms for Cloud/Edge orchestration
- Distributed infrastructures, architectures, network protocols for ultra low latency

- Static and adaptive algorithm and techniques for 3D point cloud
- Cybersecurity and privacy preservation in the Cloud/Edge Continuum
- Infrastructure as Code and automation in the Cloud/Edge Continuum
- Next-gen applications in the Continuum like AR, VR and Holography

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Important Dates

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3 April ~~26 March~~, 2023: Submission of regular papers, projects and WIP papers

23 April 2023: Notification of paper acceptance/rejection

Early May 2023: Camera-ready paper submission

20 June 2023: Workshop

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Submissions and attendance

Accepted papers will be published in the conference Proceedings and in the ACM digital Library. Submitted papers must be original work that has not appeared in and is not under consideration for another conference or a journal. Every submitted paper will be reviewed by at least three members of the Program Committee. Reviewing will be single blind.

Authors are invited to submit papers of the following types and lengths, in the ACM Proceedings format style:

- **Regular papers** (maximum 8 pages + 1 extra pages) should present innovative works whose claims are supported by solid justifications.
- **Short papers** (maximum 4 pages + 1 extra page) should target position papers.
- **Work-in-Progress** (maximum 2 pages+1 extra page) should be new and promising approaches that still await full development and validation.
- **Projects session contributions** (maximum 3 pages +1 extra page), see below.

Submissions will be received via HotCRP: <https://frame2023.hotcrp.com/>

Please note that registering on the submission site with a title and meaningful abstract by the

earliest deadline is required for enabling the actual paper submission. For full submission rules please refer to the workshop website.

This year FRAME introduces a session presenting significant research projects strongly related to the workshop. Project presentations are meant to be short surveys oriented to a technical audience, detailing the approach of an ongoing or recently completed project, fostering discussion within the workshop about state of the art approaches. The reviews for this session will consider primarily the project relevance and the presentation contribution to the workshop. FRAME proceedings will be published by ACM in the HPDC proceedings companion book. Additionally, we are working to organise a Journal Special Issue dedicated to the topics of the workshop. Authors of selected papers will be invited to submit extended versions of their work to the special issue. The authors must be prepared to sign a copyright transfer statement. At least one author of each accepted paper/project must register to the workshop by the early date, to be indicated by the organizers, and **must** present the paper.

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Organizers:

- * **Hanna Kavalionak**, ISTI-CNR, hanna.kavalionak@isti.cnr.it, General Chair
- * **Massimo Coppola**, ISTI-CNR, massimo.coppola@isti.cnr.it, Program Co-Chair
- * **Luca Ferrucci**, University of Pisa, luca.ferrucci@unipi.it, Program Co-Chair
- * **Ioannis Kontopoulos**, Harokopio University, kontopoulos@hua.gr, Program Co-Chair

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Preliminary list of program committee members:

- Jörn Altmann, Seoul National University
- Ferran Diego Andilla, Telefonica
- Lorenzo Blasi, HPE
- Emanuele Carlini, ISTI-CNR
- Patrizio Dazzi, University of Pisa
- Karim Djemame, University of Leeds
- Maria Fazio, University of Messina
- Katsiaryna Labunets, University of Utrecht
- Antonis Makris, Harokopio University
- Gabriele Mencagli, University of Pisa
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