

# Call for papers

**Final Extended deadline (Hard Deadline) 4/04/2021**

## **FRAME 2022: The 2nd Workshop on Flexible Resource and Application Management on the Edge**

**Affiliated with the 31th ACM International Symposium on High-Performance Parallel and Distributed Computing (HDPCC) 2022**

**Website of the workshop:**

**<https://www.accordion-project.eu/frame-2nd-workshop-on-flexible-resource-and-application-management-on-the-edge/>**

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, 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 closer to the user, reducing the service 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. Tackling these new issues calls for innovative combinations of tools and abstractions, where **AI** and **machine learning** techniques complement algorithmic orchestration and optimization, bringing about new levels of distributed adaptivity and self-management. From a business point of view, organizations can benefit from the distributed nature of Edge computing to deploy dedicated services on a context or time 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 partially extended toward the edge, thereby closing the proximity gap with (potential) users. Data collection can happen within geographical/administrative bounds, ensuring compliance with data privacy and data retention policies.

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 **2nd International Workshop on Flexible Resource and Application Management on the Edge (FRAME 2022)** 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.

## Topics of interest

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

- QoE/QoS modeling and assessment for the **Cloud/Edge continuum**
- Machine Learning algorithms and AI techniques **for Cloud/Edge orchestration**
- Static and adaptive algorithm and techniques for **3D point cloud**
- QoE and QoS modeling and optimization for holography
- Adaptive management of Applications in the **Cloud/Edge continuum**
- Optimization Techniques for Resources management at the Edge
- Application Models for the **Cloud/Edge continuum**
- Efficient orchestration and placement of applications for the **Cloud/Edge continuum**
- Privacy leakage and security analysis techniques in the **Cloud/Edge continuum**
- Monitoring of Resources and Applications at the Edge
- Fault detection and prevention in the **Cloud/Edge continuum**
- Architectures and models for Edge federations
- Efficient management of storage at the Edge

- Novel Computing and Data Architectures for the **Cloud/Edge continuum**
- Lightweight virtualization tools and techniques for Edge devices
- Edge OS for autonomous data processing and hyper-distributed applications
- Distributed infrastructures, architectures, network protocols for ultra low latency
- End-to-end network latency monitoring techniques

## Important Dates

**April 4, 2022: Submission of regular papers, posters and WIP papers (Extended, STRICT)**

Submission site will close on April 5, 2022 at 1:00 AM CEST

**April 26, 2022: Notification of paper acceptance/rejection (Extended, STRICT)**

**May 6, 2022: Camera-ready paper submission**

**June 30/July 1, 2022: Workshop**

## 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 6 pages) should present innovative works whose claims are supported by solid justifications.
- **Short papers** (maximum 4 pages) should target position papers that articulate a high-level vision, describe challenging future directions in the area of Edge Cloud resources management
- **Work-in-Progress/ Virtual Posters** (maximum 2 pages) are expected to present work that is less mature but holds promise, but do not merit a full submission.

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. Proofs and additional material omitted due to space constraints can be put into an appendix to be read at the reviewers' discretion. Proofs added into appendix will *\*not\** be published in the proceedings. WIP/Virtual poster submissions are encouraged to additionally submit a draft of the slides/poster they are planning to present.

FRAME will support virtual presence presentations and a hybrid participation model if needed. 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 must register to the workshop by the early date, to be indicated by the organizers, and **\*must\*** present the paper.

### Virtual presentation files

Virtual presentation and related files may be uploaded by authors as it was allowed in the first FRAME edition at HPDC 2021. Authors of accepted papers will have the option to submit additional presentation material, before the conference and along with the camera ready of their paper. This additional material will be published in the ACM Digital Library together with the paper. Authors may choose to submit a presentation video or slides as auxiliary material (optional):

- **Regular papers:** presentation slides; 20 minutes presentation video
- **Short Papers:** presentation slides; 20 min presentation video
- **WIP/Virtual poster:** presentation slides or poster; 10 minutes presentation video

## Organizers

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