

Seventh International Workshop on Serverless Computing (WoSC7)

Part of ACM/IFIP Middleware 2021. (<http://2021.middleware-conference.org/>)

The workshop will be held virtually this year.

Over the last seven years, Serverless Computing (Serverless) has gained an enthusiastic following in industry as a compelling paradigm for the deployment of cloud applications, and is enabled by the recent shift of enterprise application architectures to containers and microservices. Many of the major cloud vendors have released serverless platforms, including Amazon Lambda, Google Cloud Functions, Microsoft Azure Functions, IBM Cloud Functions. Open source projects are gaining popularity in providing serverless computing as a service.

Recently, Kubernetes gained in popularity in enterprise and in academia. Several open source projects such as OpenFaaS and Knative aim to provide developers with serverless experience on top of Kubernetes by hiding low-level details. Auto-scalable Multi-tenant Kubernetes deployments like Google Cloud Run or IBM Code Engine also overcome previous limitations of Serverless Functions like duration, networking, and higher granularity (more vCPUs).

Serverless architectures offer different tradeoffs in terms of control, cost, and flexibility compared to distributed applications built on an Infrastructure as a Service (IaaS) substrate. For example, a serverless architecture requires

developers to more carefully consider the resources used by their code (time to execute, memory used, etc.) when modularizing their applications. This is in contrast to concerns around latency, scalability, and elasticity, which is where significant development effort has traditionally been spent when building cloud services. In addition, tools and techniques to monitor and debug applications aren't applicable in serverless architectures, and new approaches are needed. As well, test and development pipelines may need to be adapted. Another decision that developers face is the appropriateness of the serverless ecosystem to their application requirements. A rich ecosystem of services built into the platform is typically easier to compose and would offer better performance. However, composing external services may be unavoidable, and in such cases, many of the benefits of serverless disappear, including performance and availability guarantees. This presents an important research challenge, and it is not clear how existing results and best practices, such as workflow composition research, can be applied to composition in a serverless environment.

As this year the workshop is virtual and we are looking not only for research papers, experience papers, demonstrations, or position papers but also for live presentations of ongoing work, demonstrations, and anything else that may be interesting to workshop audience.

The latest version of this CFP is available at <http://serverlesscomputing.org/wosc7/> (<http://serverlesscomputing.org/wosc7/>)

Topics

This workshop solicits papers from both academia and industry on the state of practice and state of the art in serverless computing. Topics of interest include but are not limited to:

- Infrastructure and network optimizations for serverless applications
- Debugging serverless applications
- Programming models
- Use cases, experiences
- Benchmarks
- Cost models, pricing models, and economics of serverless
- DevOps

- Other topics related to serverless computing

Important Dates

Paper Submission: **September 12, 2021**

Notification of Acceptance: **September 30, 2021**

Final Camera-Ready Manuscript (Hard Deadline): **October 10, 2021**

Author registration deadline: TBD

Conference: December 6-10, 2021

Papers and Submissions

Papers submissions

Authors are invited to submit original, unpublished research/application papers that are not being considered in another forum.

Submitted manuscripts should be structured as technical papers and may not exceed six (6) single-spaced double-column pages using ACM SIGPLAN style, which can be found on the ACM template page. The page limit contains all the content, including bibliography, appendix, etc.

Submitted papers must adhere to the formatting instructions of the ACM SIGPLAN style, which can be found on the ACM template page (<https://www.acm.org/publications/proceedings-template>). **The font size has to be set to 10pt.**

Note that submissions must be double-blind: authors' names must not appear, and authors must make a good faith attempt to anonymize their submissions.

The Middleware conference organizers will provide companion proceedings including all workshop papers, which will be available in the ACM Digital Library. This is subject to the availability of their camera-ready papers by October 10, 2021.

Authors should submit the manuscript in PDF format. All manuscripts will be reviewed and will be judged on correctness, originality, technical strength, rigour in analysis, quality of results, quality of presentation, and interest and

relevance to the conference attendees. Papers conforming to the above guidelines can be submitted through the paper submission system powered by HotCRP (<https://wosc7.hotcrp.com/> (<https://wosc7.hotcrp.com/>)).

All submitted manuscripts (following MIDDLEWARE conference requirements on formatting and page limits) will be peer-reviewed by at least 3 program committee members. Accepted papers with confirmed presentation will appear in the conference proceedings as well as in the ACM Digital Library.

Other submissions

Authors are invited to submit proposals for demos and other presentations that are not papers.

Presentations must include a short abstract as PDF (not longer than one page).

Accepted presentations will not be part of the conference proceedings but will be part of the workshop agenda with dedicated time for live presentation (with video backup), questions etc.

Workshop co-chairs

Paul Castro, IBM Research

Pedro García López, University Rovira i Virgili

Vatche Ishakian, IBM Research

Vinod Muthusamy, IBM Research

Aleksander Slominski, IBM Research

Steering Committee

Geoffrey Fox, Indiana University

Dennis Gannon, Indiana University & Formerly Microsoft Research

Arno Jacobsen, MSRG (Middleware Systems Research Group)

Program Committee (tentative)

Gul Agha, University of Illinois at Urbana-Champaign

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Flavio Esposito, Saint Louis University

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Ian Foster, University of Chicago and Argonne National Laboratory

Geoffrey Fox, Indiana University

Dennis Gannon, Indiana University & Formerly Microsoft Research

Pedro Garcia Lopez, Universitat Rovira i Virgili (Spain)

Alexandru Iosup, Vrije Universiteit Amsterdam

Arno Jacobsen, MSR (Middleware Systems Research Group)

Ali Kanso, Microsoft

Wes Lloyd, University of Washington Tacoma

Maciej Malawski, AGH University of Science and Technology, Poland

Lucas Nussbaum, LORIA, France

Maciej Pawlik, Academic Computer Centre CYFRONET of the University of Science and Technology in Cracow

Per Persson, Ericsson Research

Peter Pietzuch, Imperial College

Rodric Rabbah, Nimbella and Apache OpenWhisk

Eric Rozner, University of Colorado Boulder

Josef Spillner, Zurich University of Applied Sciences

Rich Wolski, University of California, Santa Barbara

