

CALL FOR PAPERS



First International Workshop on Cloud-Native Applications Design and Experience – CNAX 2018
Co-located with the 11th IEEE/ACM International Conference on Utility and Cloud Computing – UCC 2018
Zurich, Switzerland, 17–20 December, 2018

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Key information

Please remember the following key information about CNAX 2018.

1. Submission deadline: 01.09.2018
2. Notification of acceptance: 18.09.2018
3. Camera-ready submission and registration: 01.10.2018
4. Paper format: 6 pages IEEE.
5. Paper submission system: [EasyChair CNAX 2018](#)

Workshop motivation

Nowadays, an increasing number of software applications and data are migrating to online hosting services, predominantly at commercial cloud providers (e.g., Amazon, Microsoft, Google IBM, and Huawei). Hence, the adoption of software applications include several risks such as temporary or permanent unavailability of services, low platform resilience, sudden popularity spikes (i.e., the Slashdot effect), overpayment due to not exploiting flexible hosting options as well as unauthorised access to the data. Given the high diffusion of software in real society, adapting such applications to these environments is de facto a major concern of current cloud computing and software engineering researchers. In particular, in this context, new application architectures called cloud native applications (CNAs), based on microservices architecture, are becoming more popular in software development environments. However, given the characteristics and requirements (e.g., resiliency, elastic scalability, etc.) of such applications, a proper development, maintenance and testing of CNAs is a current challenge for researchers. The movement to emerging DevOps practices (e.g., Continuous Delivery and Continuous integration) substantially complicated the realization of research and industrial tools and prototypes to facilitate the software maintenance and evolution of such applications. The fine-grained decoupling of application parts with partial offloading into the cloud becomes is a major concern for developers and development tooling providers. The industrial relevance of this topic is on the rise, in particular with the recent formation of the Cloud Native Computing Foundation. The aim of this workshop is to bring together engineers, cloud computing and software engineering researchers to propose and demonstrate novel methods to properly design, implement, maintain, test, efficiently running, processing data and offering services of CNAs.

This workshop focuses on cloud-based and software engineering research for cloud applications, with special attention to the challenges related to the development, maintenance and testing of CNAs. Eligible studies can have a strong empirical component as well as proposing novel technical solutions for the development, maintenance and testing of CNAs. Results of empirical studies may be obtained through any empirical approach, e.g., qualitative (involving developers), quantitative (analyzing industrial or open source data), or experimental. We are particularly looking for innovative papers that address maintenance, testing, or development strategies for cloud native applications, providing new ways to handle the next emerging problems derived by the adoption of emerging DevOps practices (e.g., Continuous Delivery and Continuous integration) or addressing them in a more unified manner, discussing benefits, limitation and costs of provided solutions. For instance, we are interested in the evaluation of innovative solutions based on “summarization techniques” to leverage and visualize CNAs data in different ways, with the goal to achieve higher “software quality” and overall “user experience and satisfaction”. We are also looking for original work investigating interesting aspects of CNAs evolution. These paper will be submitted as “research papers”.

We are also interested in experience reports reviewing software engineering and cloud computing practices in the context of CNAs, e.g., studies that explore how testing strategies that have been proposed in the last years are used in practical settings, in different application contexts, or on the variety of data that is created in industrial development projects. For both types of submission (i.e., “research papers” and “experience reports”) we ask the authors to clarify in their paper how their approach, solution, or technology is specific to CNAs. The evaluation of papers will be based on: (i) underlying methodological soundness and rigor; (ii) innovation of the work; the significance of the results; (iii) the quality of the reporting.

Workshop topics

Authors are invited to submit original unpublished research manuscripts, experience reports and experimental results that demonstrate current research in all areas of cloud applications. Topics of interest include but are not limited to:

- Development of Cloud native applications
- Continuous Delivery and Integration aspects in the context of Cloud native applications
- Techniques for the automate the migration to the cloud.
- Migration to DevOps practices in the context of Cloud native applications
- Software Maintenance and evolution of Cloud native and cloud-aware applications
- application decomposition into microservices
- service-oriented systems to enable and support cloud-native applications
- deployment with orchestrated containers
- resilient cloud/client computing
- cloud operations analytics
- automated recovery of cloud platforms
- chaos engineering
- high availability and reliability hosting schemes
- resilient and fault-tolerant storage and computation
- user control and feedback during the entire application lifecycle
- innovative use of PaaS and IaaS interfaces
- multi-service programming techniques
- multiplexed, dispersed and stealth computing approaches
- combined compute and storage service systems for data-intensive apps
- pro-active reliability concepts, monitoring and anomaly detection
- self-organisation and self-management for cloud services

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Submission

Dates:

- Paper submission: September 1, 2018
- Notification of acceptance: September 18, 2018
- Camera-ready submission: October 1, 2018
- Author and early registration: October 8, 2018

Paper format:

Workshop papers are a maximum of 6 pages in length (in IEEE format). Submissions should be structured as technical papers in the form of PDF files. They must represent original unpublished content which is not currently under review for any other conference, workshop or journal.

All papers will be peer reviewed by at least three programme committee members. The evaluation will be based on originality, relevance of the problem to the workshop topics, technical strength, quality of results, and clarity of the presentation.

The publication of the workshop proceeding with all accepted papers will be by the IEEE and will appear in the same volume as the main conference IEEE/ACM UCC 2018. At least one author of each accepted submission must attend the workshop and all workshop participants must pay the IEEE/ACM UCC 2018 conference registration fee.

Paper templates: [IEEE Templates](#)

Paper submission system: [EasyChair CNAX 2018](https://www.easychair.org/conferences/?conf=cnax2018) (<https://www.easychair.org/conferences/?conf=cnax2018>)

Committee

Organisers:

- Sebastiano Panichella, Zurich University of Applied Sciences, Service Prototyping Lab, Switzerland (e-mail: spanichella@gmail.com)
- Jorge Cardoso, Huawei European Research Center (ERC), Germany (e-mail: jorge.cardoso@huawei.com)
- Ivo Krka, Google Inc., Switzerland (e-mail: krka@google.com)

Technical programme committee:

- Jürgen Cito, Massachusetts Institute of Technology (MIT)
- Philipp Leitner, University of Gothenburg
- Davide Taibi, Tampere University of Technology
- Damian A. Tamburri, VU University Amsterdam
- Valentina Lenarduzzi, Tampere University of Technology
- Annibale Panichella, Technische Universiteit Delft
- Foutse Khomh, École polytechnique de Montréal
- Ryan Ko, University of Waikato
- Mark Little, Red Hat
- Sebastian Götz, Technische Universität Dresden
- Michael Hilton, Carnegie Mellon University
- Marios Fokaefs, University of Alberta
- Marin Litoiu, York University
- Hamzeh Khazaei, University of Alberta
- Jack Jiang, York University

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