

**Special Issue on**

**Software Tools and Techniques for Fog and Edge Computing**

**Software: Practice and Experience (Wiley Press)**

**Call for Papers**

The Internet of Things (IoT) paradigm promises to make “things” such as physical objects with sensing capabilities and/or attached with tags, mobile objects such as smart phones and vehicles, consumer electronic devices and home appliances such as fridge, television, healthcare devices, as part of the Internet environment. In cloud-centric IoT applications, the sensor data from these “things” is extracted, accumulated and processed at the public/private clouds, leading to significant latencies.

To satisfy the ever increasing demand for Cloud Computing resources from emerging applications such as Internet-of-Things (IoT), academics and industry experts are now advocating for going from large-centralized Cloud Computing infrastructures to micro data centres located at the edge of the network. These micro data centres are often closer to a user (geographically and in access latency) compared to the centralised cloud data centre. The aim of utilizing such edge resources is to off load computation that would have “traditionally” been carried out at the cloud data centre to a resource that is closer to a user or edge devices. This vision also acknowledges the variation in network latency from an end user to cloud data centre. Whereas the network around a data centre is often high capacity and speed, that near the user device may have variably properties (in terms of resilience, bandwidth, latency, etc.).

Referred to as “fog/edge computing”, this paradigm is expected to improve the agility of cloud service deployments in addition to bringing computing resources closer to end-users. On the one hand, the development of Fog and Edge clouds includes dedicated facilities, operating system, network and middleware techniques to build and operate such micro data centres that host virtualized computing resources. On the other hand, the use of Fog and Edge clouds requires extension to current programming models and propose new abstractions that will allow developers to design new applications that take benefit from such massively distributed systems. The use of this approach also opens up other challenges in: security and privacy (as a user now needs to “trust” every micro data centre they interact with), support for resource management for mobile users who transfer session from one micro data centre to another, support for “embedding” such micro data centres into devices (e.g. cars, buildings, etc).

The Special issue seeks to attract contributions covering both theory and practice of any of the aforementioned challenges, from the management software stack to domain-specific applications. Topics of interest include (but are not limited to):

* Data centers and infrastructures for Fog/Edge Computing
* Middleware for Fog/Edge infrastructures
* Programming models and runtime systems for Fog/Edge Computing
* Scheduling for Fog/Edge infrastructures
* Fog/Edge storage
* Monitoring/metering of Fog/Edge infrastructures
* Fog/Edge Computing applications
* Latency/locality-critical applications
* Legal issues in Fog/Edge clouds
* Security and privacy – including support for new cryptographic approaches
* Modelling Fog/Edge environments – e.g. using process networks, agent-based models, Peer-2-Peer systems, etc.
* Performance monitoring and modelling
* Applications of Fog/Edge Computing

**Special Issue Paper Submission**

This special issue invites submissions that present novel and innovative ideas. It also welcomes submissions of extended versions of the best selected papers presented in the 2nd IEEE International Conference on Fog and Edge Computing (ICFEC 2018 - <http://www.cloudbus.org/fog/icfec2018/>). All submissions including invited papers will undergo the regular peer review process.

We seek submission of papers that present new, original and innovative ideas for the "first" time in SPE. Submission of "extended versions" of already published works (conference papers) is not encouraged unless they contain a significant number of "new and original" ideas/contributions along with more than 50% brand "new" material. If you are submitting an extended version of an already published conference paper, you must submit a cover letter/document detailing (1) the "Summary of Differences" between the SPE paper and the earlier paper, (2) a clear list of "new and original" ideas/contributions in the SPE paper (identifying sections where they are proposed/presented), (3) confirmation of the percentage of new material, and (4) the original conference paper. Otherwise, the submission will be "desk" rejected without being reviewed.

While submitting paper to this issue, please select “**Special Issue – Software Tools and Techniques for Fog and Edge Computing**” in the submission system.

**Regular Issue Submission**

If you have a paper on cloud computing or IoT which does not match the requirements of the Special Issue, we encourage you to submit it as a regular paper to Software: Practice and Experience. The journal has expanded its coverage to specifically include cloud computing and IoT.

**Important Dates**

Submission due date: ~~April 30th, 2018,~~ July 30, 2018

Notification of acceptance: ~~July 30th, 2018~~, September 30, 2018

Submission of final manuscript: ~~August 30th, 2018,~~ November 30, 2018

Publication date: 1st Quarter, 2019 (Tentative)

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