# 4th IEEE International Conference on Fog and Edge Computing (ICFEC 2020)

11-14 May, 2020, Melbourne, Australia
In conjunction with IEEE/ACM CCGrid 2020

URL: http://dream-lab.cds.iisc.ac.in/icfec2020/

We are delighted to invite you to Melbourne, Australia for the 4th IEEE International Conference on Fog and Edge Computing. The Conference will be held as part of and in conjunction with IEEE/ACM CCGrid, 2020, which is sponsored by the IEEE Computer Society and ACM.

## Introduction

The Internet of Things (IoT) paradigm is incorporating "things" from the physical world into the Internet environment to enhance the monitoring and intelligent control of physical, digital and social systems. Such things include smart infrastructures like power grids with sensing and actuation capabilities, mobile platforms like smart phones and vehicles, and consumer electronics and appliances such as refrigerators and healthcare devices. In conventional cloud-centric IoT applications, the observational streams from these things at the edge of the network are extracted, accumulated and processed centrally at public/private clouds, and the responses are communicated back to the things, leading to significant latency and bandwidth costs.

To meet the ever-increasing demand for computing resources from distributed applications in the wide area network, academics and industry experts are advocating the use of micro data centers to supplement large cloud data centers. These micro data centers, also called *fog resources*, are located at the edge of the network, closer to a user in the spatial and/or network topology than cloud data centers. Further, *edge devices* such as smart phones and gateways themselves have non-trivial compute capacity and are even closer to the user. As a result, it is possible to utilize both the edge and fog resources to off-load computation that would traditionally have been carried out on the cloud.

The "Fog/Edge computing paradigm" is expected to improve the agility of service deployments, make use of opportunistic and cheap computing, and leverage the network latency and bandwidth diversities between these resources. Numerous challenges arise when using fog and edge computing infrastructure, which requires the re-examination of operating systems, virtualization and containers, and middleware techniques for fabric management. Extensions to current programming and storage models are required and new abstractions that will allow developers to design novel applications that can benefit from massively distributed and data-driven systems need to be developed. Addressing security, privacy and trust of the edge and fog resources is of paramount importance while managing the resources and context for mobile, transient and hardware constrained resources. Lastly, emerging domains like autonomous vehicles and machine/deep learning need to be supported over such platforms.

## Call for papers

The conference seeks to attract high-quality contributions covering both theory and practice over system software and domain-specific applications related to Edge, Fog and Cloud computing. Some representative topics of interest include, but are not limited to:

- Data centers and infrastructures for Fog/Edge computing
- Middleware and runtime systems for Fog/Edge infrastructures
- Programming models for Fog/Edge computing
- Storage and data management platforms for Fog/Edge computing
- Scheduling for Fog/Edge infrastructures
- Performance monitoring and metering of Fog/Edge infrastructures
- Legal issues in Fog/Edge computing
- Security, privacy, trust and provenance issues in Fog/Edge computing
- Modelling and simulation of Fog/Edge environments
- Novel, latency-sensitive and locality-critical applications of Fog/Edge computing

## Submission Instructions

ICFEC will have two rounds of submissions, Early and Regular. Papers submitted to either rounds will be evaluated by the same program committee using the same evaluation criteria. Papers not accepted in the Early Submission round may *resubmit* a revised version to the Regular submission round provided *significant changes have been made to address the reviewer comments*. In such cases, a 2-page rebuttal summarizing the changes made must be included in the appendix (excluded from the page limit), and the title of the paper be prefixed with *"Revision:"*.

We invite authors to submit *original manuscripts* that have neither been published elsewhere nor are under review at a different venue. The manuscripts should be structured as technical papers, written in *English*. Authors should submit papers electronically in PDF format and may not exceed *10 letter-size pages* in length, including all figures, tables and references. Papers should follow the *IEEE format template* for conference proceedings available at http://www.ieee.org/conferences_events/conferences/publishing/templates.html. Submissions not conforming to these guidelines or received after the due date may be returned without review. All manuscripts will be reviewed and judged on originality, technical strength, significance, quality of presentation, and relevance to the conference attendees.

Papers may be submitted online at https://www.easychair.org/conferences/?conf=icfec2020

## Important Dates

### Early Submission

- Papers due: November 23, 2019
- Author notifications of Acceptance: January 10, 2020
- Camera Ready Paper: March 28, 2020

### Regular Submission

- Papers due: January 31, 2020
- Author notifications of Acceptance: March 15, 2020
- Camera Ready Paper: March 28, 2020
- Registration Dates: Aligned with CCGRID Deadlines: http://cloudbus.org/ccgrid2020/

## Publication

Papers that are accepted for publication may be accepted as REGULAR paper (10 pages) or SHORT papers (6 pages), depending on the reviewer recommendations. Accepted papers will included in the conference proceedings that will be published through the IEEE Computer Society Conference Publishing Services.

## Special Issue

Authors of papers that are highly rated from the review rounds of ICFEC 2020 may be invited to submit an extended version to a special issue that we expect to appear with the *Journal of Software: Practice and Experience (SPE)* published by Wiley Press. Further information will be posted after the conference concludes.

## Organization

### General Chairs

- Rajkumar Buyya, *University of Melbourne, Australia*
- Haiying Shen, *University of Virginia, USA*

### Program Chairs

- Yogesh Simmhan, *Indian Institute of Science, India*, simmhan@iisc.ac.in
- Blesson Varghese, *Queen's University Belfast, UK*, B.Varghese@qub.ac.uk

### Steering Committee

- Rajkumar Buyya, University of Melbourne, Australia
- Adrien Lebre (Inria, France)
- Omer Rana, Cardiff University, UK
- Anthony Simonet (Inria, France)
- Haiying Shen, University of Virginia, USA
- Massimo Villari, University of Messina, Italy