**INTRODUCTION**

High Performance Computing and Communications (HPCC, CCF C类会议) has moved into the mainstream of computing and has become a key technology in determining future research and development activities in many academic and industrial branches. Among a series of highly successful International Conferences on High Performance Computing and Communications (HPCC), the HPCC-2019 conference is the 21st edition of a forum for engineers and scientists in academia, industry, and government to address the resulting profound challenges and to present and discuss their new ideas, research results, applications and experience on all aspects of high performance computing and communications.

HPCC-2019 will provide a high-profile, leading-edge forum for researchers, engineers, and practitioners to present state-of-art advances and innovations in theoretical foundations, systems, infrastructure, tools, testbeds, and applications for the HPCC, as well as to identify emerging research topics and define the future.

HPCC-2019 will be hosted in Zhangjiajie. It is the first national forest park in China and one of the most important tourist cities in China. It is located in the northwest of Hunan province, about 400 kilometers away from Changsha, the capital of Hunan province, covering a total area of 9,563 square kilometers, of which 76% are mountainous area. Zhangjiajie was listed into the World Natural Heritage Catalogue by the UNESCO in 1992. Zhangjiajie was awarded the title of “World Geological Park” in 2004.

**SCOPE AND TOPICS**

Topics of interest include, but are not limited to:

**Track 1: High Performance Computing and Applications**

- High performance computing theory
- High performance computing architectures
- Parallel programming paradigms, models and languages
- Parallel algorithms
- Domain-specific parallel and distributed algorithms
- System software and middleware
- System software support for scientific workflows
- Storage and I/O systems
- Resource management
- Job scheduling
- Fault tolerance and resilience
- Exascale systems
- Instruction-level and thread-level parallelism
- Performance modeling and evaluation
- Languages and compilers for high performance computing
- Quantum computing
- Massively multicore systems
- Future novel computing platforms
- Database applications and data mining
- High performance computing for bioinformatics
- High performance computing for big data analytics
- High performance computing for data mining
- High performance computing for artificial intelligence
- High performance computing for block chains
- Green (power efficient) high performance computing

**Track 2: Parallel and Distributed Computing and Systems**
- Parallel and distributed system architectures
- Parallel and distributed software technologies
- Parallel and distributed algorithms
- Data center architectures
- Resource virtualization
- Web services and Internet computing
- Cloud computing
- Utility computing
- Grid and cluster computing
- Peer-to-peer computing
- Biological/molecular computing
- Resource management for parallel and distributed systems
- Embedded systems
- Distributed systems and applications
- Collaborative and cooperative environments
- Pervasive/ubiquitous computing and intelligence
- Tools and environments for parallel and distributed computing
- MapReduce, Hadoop, Spark, scalable computing and storage platforms
- Distributed Graphics and VR/AR/MR Systems
- Distributed AI and Soft/Natural Computing
- Power-efficient and green computing systems
- Parallel and distributed computing for big data
- Parallel and distributed computing for data mining
- Parallel and distributed computing for artificial intelligence

**Track 3: Communications and Networking**
- Network and interconnect architectures
- Communications and synchronization on parallel and distributed systems
- Mobile computing and wireless communications
- Computer Networks
- Internet architectures and protocols
- Telecommunications
- Autonomic computing, reliability, and fault-tolerance
- Trust, security, and privacy
- Energy-aware computing and networking
• 5G networks
• Software defined networking
• network functions virtualization
• Machine learning and deep learning
• Social networking and computing
• Performance evaluation and measurement

IMPORTANT DATES
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• Workshop Proposal Due: 10 January 2019
• Paper Submission Deadline: 10 February 2019-23 March 2019 15 April 2019 (Firm)
• Authors Notification: 22 April 2019 15 May 2019
• Camera-Ready Paper Due: 25 May 2019 10 June 2019
• Early Registration Due: 30 June 2019
• Conference Date: 10-12 August 2019

PAPER SUBMISSION GUIDELINE
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All papers need to be submitted electronically through the conference submission website ( http://edas.info/N25434 ) with PDF format. The materials presented in the papers should not be published or under submission elsewhere. Each paper is limited to 8 pages (or 10 pages with over length charge) including figures and references using IEEE Computer Society Proceedings Manuscripts style (two columns, single-spaced, 10 fonts). You can confirm the IEEE Computer Society Proceedings Author Guidelines at the following web page:
http://www.computer.org/web/cs-cps/
Manuscript Templates for Conference Proceedings can be found at:
https://www.ieee.org/conferences_events/conferences/publishing/templates.html

Once accepted, the paper will be included into the IEEE conference proceedings published by IEEE Computer Society Press (indexed by EI). At least one of the authors of any accepted paper is requested to register the paper at the conference.

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