



International Conference on Computers & Industrial Engineering CIE45

UNIVERSITÉ
DE LORRAINE

**Call for papers -- Special Session on:
Future Generation Computer Systems for High Performance Parallel, Distributed, and Network-
Based Processing
for CIE45
October 28-30, 2015 - Metz, France**

Session chair

HdR- Dr. Camel Tanougast, LCOMS, University of Lorraine, France.

Prof. Imed Kacem, LCOMS, University of Lorraine, France.

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Session description

Nowadays, media data are increasingly becoming ever bigger and stand as one of the most important and valuable information source. As a consequence, high performance computing is a necessary support for the analysis of very large volumes of possibly distributed data. Traditional treatment with single-core processors is not adequate and research directions are usually pointing at fast, incremental, approximate, distributed, parallel, multithreaded software or hardware systems. Over the years the definition of high performance computing evolved according to the opportunities provided by new technologies (such as programmable arrays) and to the needs of the emerging industrial and scientific applications. High performance computing research topics range from traditional parallel and distributed algorithms, to modern multi-core CPU or system on chip architectures, FPGA computing, streaming GPUs, cloud computing, etc. Thereby, parallel, Distributed, and Network-Based Processing has undergone impressive change over recent years. New architectures and applications have rapidly become the central focus of the discipline. These changes are often a result of association of parallel and distributed technologies with other rapidly evolving and reconfigurable technologies. All these are hot research topics that pose significant challenges regarding mainly the processing resources, execution speed, accuracy, scalability and reconfigurability. It is of paramount importance to review and assess these new developments in recent research achievements in the areas of parallel and distributed computing, software and hardware computing.

The proposed special session focuses on the issues of high performance, distributed and parallel computation in the process of big media data. This special session aims at presenting new and original contributions focusing on application of high performance parallel and distributed data mining, including distributed, parallel, P2P and data intensive algorithms and systems, system architectures (CPU and/or FPGA networked computing, processor-level parallelism as well as distributed/parallel computation).

Topics of interest include, but are not restricted to:

Topics

- ▶ *Parallel and embedded Computing: massively parallel machines; embedded parallel and distributed systems; multi- and many-core systems; GPU and FPGA based parallel systems; parallel I/O; memory organization.*
- ▶ *Distributed and Network-based Computing: Cluster, Grid, Web and Cloud computing; mobile computing; interconnection networks.*
- ▶ *Big Data: large scale data processing; distributed databases and archives; large scale data management; metadata; data intensive applications.*
- ▶ *Models and Tools: programming languages and environments; runtime support systems; performance prediction and analysis; simulation of parallel and distributed systems.*
- ▶ *Systems and Architectures: novel system architectures; high data throughput architectures; service-oriented architectures; heterogeneous systems; shared-memory and message-passing systems; middleware and distributed operating systems; dependability and survivability; resource management.*
- ▶ *Advanced Algorithms and Applications: distributed algorithms; multi-disciplinary applications; computations over irregular domains; numerical applications with multi-level parallelism; real-time distributed applications.*

<http://cie45.event.univ-lorraine.fr/>

► *Data mining : Data mining exploiting multi-core CPUs or GPUs, parallel and distributed algorithms for large-scale data mining and pre-processing and post-processing tasks, Peer-to-Peer Data Mining, Energy-efficient distributed data mining algorithms and systems, Grid-based and cluster-based data mining algorithms and systems, , Distributed techniques for incremental, exploratory and interactive mining*

Submission

Please submit your full paper on the Easychair website:

<https://easychair.org/conferences/?conf=cie45>

May 31, 2015: deadline for paper submission
June 21, 2015: notification of acceptance/reject
July 15, 2015: deadline for final paper
August 16, 2015: deadline for registration.

Practical information

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 8 pages (in the standard CIE conference format). For up-to-date information and paper submission, please visit the conference submission page:

<https://easychair.org/conferences/?conf=cie45>

The proceedings of CIE 45 will be published on the web page of the conference and that of Computers & Industrial Engineering. They carry the identifier ISSN of 2164-8670 for the CD-ROM version and 2164-8689 for the Online version. A special issue of the international journal "COMPUTERS & INDUSTRIAL ENGINEERING" will be dedicated to the best papers presented at the conference after rigorous reviews.

For any practical issue please write to: cie45@easychair.org

