CALL FOR PAPERS – COMPUTING FRONTIERS 2015

ACM International Conference on
Computing Frontiers

May 18 – 21, 2015, Ischia, Italy
http://www.computingfrontiers.org/

EXTENDED SUBMISSION DEADLINE

SCOPE

Computing Frontiers represents an engaged, collaborative community of researchers who are excited about transformational technologies in the field of computing. We are presently on the cusp of several revolutions, including new memory technologies, networking technologies, algorithms for handling large-scale data, power-saving and energy-efficient solutions for data centers, systems solutions for cloud computing, new application domains that affect every day life and many, many more. Boundaries between the state-of-the-art and revolutionary innovation constitute the computing frontiers that must be pushed forward to advance science, engineering, and information technology. Before revolutionary materials, devices, and systems enter the mainstream, early research must be performed using far-reaching projections of the future state of technologies.

TOPICS OF INTEREST

We seek contributions that push the envelope in a wide range of computing topics, from more traditional research in architecture and systems to new technologies and devices. We seek contributions on novel computing paradigms, computational models, algorithms, application paradigms, development environments, compilers, operating environments, computer architecture, hardware substrates, memory technologies and smarter life applications. We are also interested in emerging fields that may not fit within traditional categories. Topics include, but are not limited to:

- Algorithms and Models of Computing
- Biological Computing Models
- Big Data
- System Complexity Management
- Computers and Society
- Security
- Limits on Technology Scaling and Moore's Law

- Uses of Technology Scaling
- Compiler technologies
- Networking
- Interdisciplinary Applications
- Position Papers, Trend Papers and Crazy Ideas
- Industry Sessions and Workshops

IMPORTANT DATES

Paper/Poster Submission Deadline: Friday January 30, 2015, 11:59.59 PM (PST)
Author Notification: Monday March 2, 2015
Camera-Ready Papers Due: Friday March 20, 2015

SUBMISSION

Authors are invited to submit full papers or posters to the main conference. Full papers and poster abstracts must be submitted through the conference paper submission site. Full papers should not exceed **eight double-column** pages in ACM SIG alternate style (Option 2). Poster abstracts should not exceed two pages in the same format. These limits include figures, tables, and references. Our review process is **double-blind**. Thus, please remove all identifying information from the paper submission (also if citing own work). Abstracts for accepted posters will be published in the proceedings and in the ACM Digital Library (note that authors of these works retain their copyright rights to publish more complete versions later). The best papers from the Computer Frontiers Conference and Workshops will be invited to be published in special issues of IJPP or PARCO. As per ACM guidelines, at least one of the authors of accepted papers is required to register for the conference.

GENERAL CHAIRS
Claudia Di Napoli, ICAR-CNR, IT
Valentina Salapura, IBM, US

PROGRAM CHAIRS
Hubertus Franke, IBM Research, US
Rui Hou, Institute for Computing Technology, Chinese Academy of Sciences, PRC

INDUSTRY SESSIONS AND WORKSHOPS

Computing Frontiers 2015 will feature four Industry Sessions and Workshops that focus on special topics. Submission of papers to the workshops is handled separately from the main conference. Please refer to the websites of the workshops for more details.

Future Information Security, Privacy and Forensics for Complex Systems

FISP-2015 is the first International Workshop on Future Information Security, Privacy, and Forensics for Complex Systems. The aim of FISP-2015 is to provide a premier international platform for scholars, researchers, and practitioners in academia and industry to discuss the most recent challenges and developments in "Information Security, Privacy and Forensics for Complex systems" from the perspective of providing security awareness and its best practices for the real world. This workshop is open to submit novel and high quality research contributions in the field of information security and privacy. We anticipate that this workshop will open new entrance for further research and technology improvements in this important area.

> Paper Submission Deadline: January 16, 2015 (Fri), 11:59:59 PM (PST)
> Workshop website: http://www.icsrg.org/fisp-2015.html

LP-EMS15 - Design of Low Power Embedded Multimedia Systems

Digital Media Technologies (DMTs) constitute one of the widest and most important research areas in the ICT domain. Digital technologies allowed the design of complex systems for creation, fruition and sharing of audio/video/image contents pervading consumer electronics. A key challenge in this domain regards the possibility of implementing real-time high-performance multimedia systems minimizing, contemporarily, their power consumption. Complexity on algorithmic side and heterogeneity on processing platform side, are normally colliding system constraints. It is necessary to close the gap between efficient processing and optimal hardware support by adopting smart hardware-software co-design solutions and flexible design frameworks. In this perspective, dataflow-streaming based system models are naturally capable of capturing domain-specific knowledge into formal abstract system specifications capable of exposing the intrinsic potential parallelism of the algorithms. Such representations result very appropriate to model and explore the design space of DMTs applications.

> Paper Submission Deadline: Monday February 2, 2015, 11:59.59 PM (PST)
> Workshop website: https://sites.google.com/site/cf15lowpowersystems/

Analytics Platforms for the Cloud

Cloud computing has become popular because of cost, agility, scale, and flexibility. At the same time, the use of flexible analytic platforms such as Hadoop, Spark, etc. have grown in popularity and are being used to drive the computational side of many types of workloads. Many are now starting to bring these two together to drive efficient deployment of analytic capabilities which can specifically leverage the flexibility and agility of Cloud delivery. The purpose of this workshop is to provide a forum for researchers and practitioners in analytics and cloud computing an end-to-end view on the challenges and opportunities of cloud-based analytics, and enable idea sharing.

> Paper Submission Deadline: February 8th, 2015
> Workshop website: http://researcher.watson.ibm.com/researcher/view_group.php?id=5744

Making Sense of Sensed Data - Issues in Developing Heterogeneous Cognitive Systems

A new frontier in computing is evolving around developing systems that 'sense' and respond to data in ways that represent or mimic human 'cognition'. These advancements represent the intersection of developments in processor hardware, software, and sensing devices. Examples include the implementation of low power architectures that mimic the type of synaptic information transmission that occur in animal brains (Neuromorphic systems), improvements in probability based software for big data analysis systems such as Natural Language Processing, the development of "deep learning systems" which have demonstrated systems that 'learn' representations of data, and the explosive growth of user based content in data systems such as cell phone video etc.. The evolution of these systems is leading to new possibilities for computing systems to interpret a vast amount of big data collected by sensors into a meaningful representations and to learn from that data or draw inferences from it.

> Paper Submission Deadline: Friday, Feb 13, 2015.
> Workshop website: http://computingfrontiers.org/2015/workshops/MSSD15/