The First International Workshop on Heterogeneous Computation in Specific Domain Accelerations (HC-SDA 2019)

February 16, 2019 Washington D.C., USA

Website: https://hcsda-workshop.github.io/

In conjunction with the 25th IEEE International Symposium on High-Performance Computer Architecture

Call for Papers

Data is being generated at an unprecedented rate in the IoT era across countless applications. How to process the Big Data in a timely manner is a major obstacle we are facing nowadays. The growing diversity and heterogeneity of the hardware platforms just adds another layer of complexity on top of a challenging problem. Even though heterogeneous platforms such as GPUs, Xeon Phis, and FPGAs, has been widely adopted, the emerging computer architectures with coprocessors and hybrid memories are encountering big challenges. Therefore, how to effectively and efficiently utilize different hardware accelerators together to serve one single application remains a challenge for heterogeneous computing researchers.

HC-SDA 2019 seeks original unpublished research on algorithms, models, applications and tools for heterogeneous computing to accelerate the performance, to improve energy efficiency, and to enhance the reliability of heterogeneous platforms from edge to cloud and in between. We are particularly interested in heterogeneous computing research employing two or more different types of hardware accelerators. The topics to be covered include but are not limited to:

- Microarchitecture design on heterogeneous processor/system combined with emerging memory/storage system (PCM, SSD, *etc*.)
- Heterogeneous parallel programming paradigms and models.
- Energy efficient parallel accelerating models for heterogeneous platforms.
- Parallel algorithms for heterogeneous and/or hierarchical systems, including many-cores and hardware accelerators (FPGAs, GPUs, Xeon Phis, *etc*.)
- Heterogeneous computation support for autonomous vehicle driving or other applications using artificial intelligent algorithms (*e.g.*, images processing, features recognition).
- Heterogeneous computing in large-scale datacenters.
- Software engineering implementation on heterogeneous computing platforms.
- Multiple objectives optimization on heterogeneous platforms.
- Task scheduling algorithms with heterogeneous cloud and datacenter platforms.
- Experience with porting parallel software from supercomputers to heterogeneous platforms
- Fault tolerance of parallel computations on heterogeneous platforms.

General Chairs:

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Stéphane Zuckerman, Université de Cergy-Pontoise, France

Submission Guidelines: Interested authors are encouraged to submit unpublished works (up to 6 pages) following the **IEEE conference paper format** by the easy-chair system.

Important Dates:

Abstract Submission Deadline: Dec.27th, 2018

Regular Paper Submission Deadline: Jan. 3rd, 2019 (11.59 pm PST)

Acceptance Notification: Jan 15th, 2019

Camera Ready Submission: Jan. 31st, 2019

Workshop: Feb 16th, 2019 (9:30am – 4:30 pm EST)

Submission Link: https://easychair.org/conferences/?conf=hcsda2019

Travel & Registration:

Please register from the entrance of the HPCA 2019 main conference page, and look over the related program and schedule. Early registration is really recommendation, and applying for HPCA student travel grants is also a good alternative.

Important Notes:

1. Submitting and presenting a paper in the workshop does not preclude publication in other venues (there are no proceedings to this workshop). However, the selected non-published top-quality papers accepted into the workshop will be invited to submit to the **Special Issue on Heterogeneous Computation in Specific Domain Accelerations (HC-SDA)**, at **Future Generation Computing Systems (FGCS), Elsevier**.

https://www.journals.elsevier.com/future-generation-computer-systems/call-for-papers/heterogeneous-computation-in-specific-domain-accelerations

2. The non-published and selected papers would be recommended to extend and submit to special issues of international journals indexed by SCI or EI Compendex, (e.g.FGCS).

3. **If you have any questions, please contact general chairs without hesitation.**

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