

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HC-SDA 2019 seeks original unpublished research on algorithms, models, applications and tools for heterogeneous computing to accelerate the performance, to improve energy efficiency, and to enhance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:

Songwen Pei, University of Shanghai for Science and Technology, China

Chen Liu, Clarkson University, USA

Neal N. Xiong, Northeastern State University, USA

Steering Committee:

Jean-Luc Gaudiot, University of California, Irvine, USA

Laurence T. Yang, St. Francis Xavier University, Canada

Program Committee:

Christophe Bobda, University of Arkansas, USA

Yu Chen, State University of New York – Binghamton, USA

Yuanqing Cheng, Beihang University, China

Shuiguang Deng, Zhejiang University, China

Alfredo Goldman, São Paulo University, Brazil

Gaoqi He, East China Normal University, China

Liang He, PerceptIn and UNC, USA

Libo Huang, National University of Defense Technology, China

Miaoqing Huang, University of Arkansas, USA

Li Jiang, Shanghai Jiao Tong University, China

Linhua Jiang, University of Shanghai for Science and Technology, China

Zhanpeng Jin, University of Buffalo, USA

James E. Stine, Jr., Oklahoma State University, USA

Myoung-Seo Kim, SK Hynix, Korea

Tao Li, Nankai University, China

Haikun, Liu, Huazhong University of Science and Technology, China

Praveen Rao, University of Missouri-Kansas City, USA

Danda B. Rawat, Howard University, USA

Won Woo Ro, Yonsei University, Korea

Jie Tang, South China University of Technology, China

Glen Tian, Queensland University of Technology, Australia

Yu Wang, Tsinghua University, China

Neal Naixue Xiong, Colorado State University, USA

Xiaochun Ye, ICT, Chinese Academy of Sciences, China

Qiaoyan Yu, University of New Hampshire, USA

Xiang Yu, PONY.AI, USA

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).
2. The non-published and selected papers would be recommended to extend and submit to special issues of international journals.
3. **If you have any questions, please contact general chairs without hesitation.**

Email: swpei@usst.edu.cn and cliu@clarkson.edu

Updated on Nov.27th, 2018