Introducing 2nd International Workshop on Adaptive Self-Tuning Computing Systems for the Exaflop Era http://exadapt.org

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Grigori Fursin
INRIA, France
grigori.fursin@inria.fr

Robert Hundt
Google, CA, USA
rhundt@google.com

Jason Mars
University of Virginia, USA
jom5x@cs.virginia.edu

Yuriy Kashnikov
UVSQ, France
Yuri.Kashnikov@prism.uvsq.fr

"It is not the strongest of the species that survives, or the most intelligent; it is the one most capable of change"

attributed to Charles Darwin

Modern large scale computing systems are rapidly evolving and may soon feature millions of cores with exaflop performance. However, this leads to a tremendous complexity with an unprecedented number of available design and optimization choices for architectures, applications, compilers and run-time systems. Using outdated, non-adaptive technology results in an enormous waste of expensive computing resources and energy, while slowing down time to market.

The 2nd International Workshop on Self-tuning, Large Scale Computing Systems for Exaflop Era (EXADAPT) is an interdisciplinary forum for researchers, practitioners, developers and application writers to discuss ideas, experience, methodology, applications, practical techniques and tools to improve or change current and future computing systems using self-tuning technology. Such systems should be able to automatically adjust their behavior to multi-objective usage scenarios at all levels (hardware and software) based on empirical, dynamic, iterative, statistical, collective, bio-inspired, machine learning and alternative techniques while fully utilizing available resources.

All full and position papers have been peer-reviewed and had to include unpublished ideas on how to simplify, automate and standardize the design, programming, optimization and adaptation of large-scale computing systems for multiple objectives to improve performance, power consumption, utilization, reliability and scalability.

We would like to thank all our Program Committee members for providing very deep and detailed reviews on time that allowed us to select high quality papers to appear at this workshop and in ACM Digital Library (International Conference Proceedings Series, ISBN 978-1-4503-1147-2):

- *Erik R. Altman*, IBM TJ Watson, USA
- *Jose Nelson Amaral*, University of Alberta, Canada
- *David H. Bailey*, Lawrence Berkeley National Laboratory, USA
- *Steve Blackburn*, Australian National University, Australia
- *Francois Bodin*, CAPS Entreprise, France
- *Franck Capello*, INRIA, France
- *Koen DeBosschere*, Ghent University, Belgium
- *Rajiv Gupta*, University of California, Riverside, USA
- *Anton Lokhmotov*, ARM, UK
- *Geoff Lowney*, Intel, USA
- *Allen Malony*, University of Oregon, USA
- *Bernd Mohr*, Julich Supercomputing Centre, Germany
- *Tipp Moseley*, Google, USA
- *Toshio Nakatani*, IBM Tokyo Research Lab, Japan
- *Nacho Navarro*, UIUC, USA / UPC, Spain
- *Boyana Norris*, Argonne National Laboratory, USA
- *David Padua*, UIUC, USA
- *Keshav Pingali*, University of Texas at Austin, USA
- *Markus Puschel*, ETH Zurich, Switzerland
- *Xipeng Shen*, College of William & Mary, USA
- *Allan Snavely*, San Diego Supercomputer Center, USA
- *Felix Wolf*, Aachen University, Germany
- *Chengyong Wu*, ICT, China

We would also like to thank *Prof. Steve Furber* (University of Manchester, UK) who kindly agreed to give a keynote on "Self-Tuning Bio-Inspired Massively-Parallel Computing" and to participate in the joint EXADAPT-2/GPGPU-5 round table.

Finally, we are grateful to *Dr. Tim Harris* (ASPLOS general chair, Microsoft Research, UK) for the guidelines when arranging this workshop at ASPLOS 2012.