# Introducing 3rd International Workshop on Adaptive Self-Tuning Computing Systems

Christophe Dubach
*University of Edinburgh, UK*
christophe.dubach@ed.ac.uk

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

Computing systems are rapidly evolving into heterogeneous machines featuring many processor cores. 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 Using outdated, non-adaptive technology results in an enormous waste of expensive computing resources and energy, while slowing down time to market.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 3rd International Workshop on Adaptive Self-tuning Computing Systems 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.

We would like to thank all our Program Committee members for providing very deep and detailed reviews on time that allowed us to select 7 high quality papers out of 13 submitted (with at least 3 reviews per paper) to appear at this workshop and at the workshop website:

- *Erik Altman*, (IBM TJ Watson, USA)
- *Marisa Gil*, (UPC, Spain)
- *Vijay Janapa Reddi*, (UT Austin, USA)
- *Timothy Jones*, (University of Cambridge, UK)
- *Jaejin Lee*, (Seoul National University, Korea)
- *Anton Lokmotov*, (ARM, UK)
- *Chi-Keung Luk*, (Intel, USA)
- *Tipp Moseley*, (Google, USA)
- *Lasse Natvig*, (NTNU, Norway)
- *David Padua*, (UIUC, USA)
- *Markus Püschel*, (ETH Zurich, Switzerland)
- *Juergen Teich*, (University of Erlangen-Nuremberg, Germany)
- *Chengyong Wu*, (ICT, China)

We prepared the following program for the workshop:

- **Application-Level Voltage and Frequency Tuning Of Multi-Phase Program on the SCC.**
  *Kenneth Berry* (Florida International University, FL, USA), Felipe Navarro (Florida International University, FL, USA) and Chen Liu (Clarckson University, NY, USA)

- **Position Paper: Weak Heterogeneity as a way of Adapting Multicores to Real Workloads.**
  *Erik Tomusk and Michael O'Boyle* (University of Edinburgh, UK)

- **Position Paper: Evolving Advanced Neural Networks on Run-Time Reconfigurable Digital Hardware Platform.**
  *Laszlo BAKO* (Sapientia University, Tirgu-Mures, Romania), *Sandor-Tihamer BRASSAI* (Sapientia University, Tirgu-Mures, Romania), *Lajos LOSONCZI* (Lambda Communication Ltd., Tirgu Mures, Romania) and Laszlo-Ferenc MARTON (Sapientia University, Tirgu-Mures, Romania)

- **Adaptive OpenCL (ACL) Execution in Heterogeneous Architectures.**
  *Dan Connors* (UC Denver, USA)

- **Bio-inspired Self-Tuning Mechanism for Distributed Computing.**
  *Ichiro Satoh* (National Institute of Informatics, Tokyo, Japan)

- **Position Paper: Code Specialization For Red-Black Tree Management Algorithms.**
  *Alexandre Carbon, Yves Lhuillier and Henri-Pierre Charles* (CEA, LIST, France)

- **Sambamba: Runtime Adaptive Parallel Execution.**
  *Kevin Streit, Clemens Hammacher, Andreas Zeller and Sebastian Hack* (Saarland University, Germany)

We would also like to thank *Prof. Markus Püschel* (ETH Zürich, Switzerland) who kindly agreed to give a keynote on "Program Synthesis for Performance".