



Performance, Power and Energy-Efficiency Optimization in Computer Architectures

Guest Editors:

Prof. Leonel Sousa

Prof. of ECE, INESC-ID, Instituto Superior Técnico, Universidade de Lisboa, Portugal

las@inesc-id.pt

Dr. Nuno Roma

INESC-ID, Instituto Superior Técnico, Universidade de Lisboa, Portugal

Nuno.Roma@inesc-id.pt

Deadline for manuscript submissions:
3 March 2020

Message from the Guest Editors

Topics of interest include (but are not limited to) the following:

Computer architecture trends for performance and energy efficiency:

- ISA diversity and morphable structures;
- Run-time reconfiguration/adaptation and dynamic scalability;
- CPU accelerator co-design (GPUs, APUs, FPGAs, etc.);
- Heterogeneous and parallel processing architectures;
- Approximate computing techniques and architectures;
- Neuromorphic architectures.

Energy/power management and control:

- Run-time power/energy monitoring and sensing;
- Performance, power, energy and heat/temperature modeling;
- Dynamic voltage and frequency scaling (DVFS);
- Power/clock gating strategies;
- Performance vs. power/energy scaling and management.

Tools and algorithms:

- Programming languages, compilers, and models for energy-aware computing;
- Profiling and simulation tools for heat/power/energy estimation;
- Scheduling, mapping and task/thread migration policies for performance and power/energy optimization;
- Performance- and energy-aware resource management;
- Operating system support and energy management tools.

