

PECS'21: The First Workshop on Performance and Energy-efficiency of Concurrent Systems

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ABSTRACT

Concurrent systems, based on (distributed) multi/many-core processing units, are the nowadays reference computing architecture. The (continuously-growing) level of hardware parallelism they offer has led these platforms to play a central role at any scale, ranging from data centers, to personal (mobile) devices. Optimizing performance and/or ensuring energy efficiency when running complex software stacks on top of these systems is extremely challenging due to several aspects, like data dependencies or resource sharing (and interference) among application threads, as well as VMs. Furthermore, hardware accelerators like GPGPUs or FPGAs introduce a level of heterogeneity that can potentially offer further opportunities for combined gain in performance and energy efficiency, if correctly exploited.

The goal of this workshop is to establish a venue for both academia and industry experts and practitioners, where they can discuss challenges, perspectives and opportunities given by researching on scalable, energy-efficient and secure software deployed on top of modern (heterogeneous) concurrent platforms.

CCS CONCEPTS

• **Computing methodologies** → **Concurrent computing methodologies**; • **Software and its engineering** → **Software performance**;

KEYWORDS

Performance optimization, Energy Efficiency, Concurrent Systems, Multi cores

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1 THE FIRST EDITION OF PECS

High-quality research papers have been solicited in all aspects of *performance assessment, modeling, optimization, and energy efficiency* in concurrent systems, including (but not limited to) the following ones:

- Parallel and concurrent programming frameworks;
- Heterogeneous computing;
- Runtime environments for HPC or daily usage software;
- Shared and concurrent data structures;
- Data management and services;
- Non-blocking synchronization;
- Operating Systems;
- Virtualization support;
- Networking functions;
- Security.

The final program of the workshop has included accepted articles that have been submitted, as well as invited keynotes.

2 PROGRAMME COMMITTEE

We are very grateful to each of our Programme Committee (PC) members for their continued willingness to provide reviews of submissions. Each submission received three reviews. The PC members of the 1st edition of PECS are:

- Pierangelo Di Sanzo, DIAG, La Sapienza, Italy
- Diego Didona, IBM Zurich Research Laboratory, Switzerland
- Alessandro Pellegrini, National Research Council, Italy
- Sebastiano Peluso, Facebook, United States
- Paolo Romano, INESC-ID, Portugal
- Eric Rutten, INRIA, France
- Philip A. Wilsey, University of Cincinnati, United States

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