The 16th International Conference on Green, Pervasive and Cloud Computing (GPC2021)

Special Session on Advances on Energy Efficient Computing Systems

Call For Papers

Theme of Special Session:

Cloud computing continues to grow with larger scales and higher speed to facilitate the on-demand provisioning of computational resources across different industries. The infrastructure behind the « cloud » is usually built by large scale systems, including cluster, and data centers. Maintaining the normal function of the systems requires tremendous amounts of energy, with associated environmental costs, like significant CO_2 emissions. Such costs cannot be ignored, and the research community has the responsibility to lead studies towards building environment-friendly computing systems. Energy-efficient computing systems enable smaller, lighter, but faster computation. Ways and effective methods are expected to be explored to reduce the energy used while maintaining satisfying performance. Therefore, the proposed Special Session is devoted to promoting scientific interactions among computer systems and the environment, focusing on the cutting-edge technologies or solutions dedicated to realizing energy-efficient computing system in terms of hardware and software.

This Special Session concentrates on the active works achieved by researchers and practitioners on theoretical and practical challenges, especially for the actions taken to reduce environmental impact brought by IT Industrial activities. The main objective of this Special Session is to solicit high-quality contributions that discuss and disseminate the current work, original results during the process of creation, operation and maintenance of computing systems, showcasing new and novel algorithms, resource scheduling strategies, software tools/libraries, and hardware improvements oriented at providing energy efficiency. In particular, the topics of interest include, but are not limited to:

- Novel energy-efficient designs on processing unit level: heterogeneous multi/many-core systems, GPU, CPU, FPGA.
- Novel energy-efficient designs on computing platform level: edge, cluster, data center.
- Novel solutions to optimize energy-efficient for deep learning computing.
- Efficient thermal management strategies for optimizing cooling.
- Efficient resource management strategies for distributed computing systems.
- AI based strategies for managing energy efficiency of computing platforms.

- Modeling/Predictive tools for aiding energy efficient design.

Special Session Organizers

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(To complete)

Important Dates

- Open for submission: 01/07/2021
- Manuscripts due: 01/09/2022
- Peer reviews to authors: 15/10/2022
- Camera ready: 15/11/2022