
IEEE MCSoc 2021

Special Session on “Secure, Reliable and Energy-efficient Execution on MPSoCs”

Call for Paper

Session Co-Organizers

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Abstract

Multi-Processor System-on-Chips (MPSoCs) provide unique opportunities to achieve high computational performance while also providing energy efficiency to system designers. Such architectures have become increasingly popular for executing compute-intensive applications such as computer vision and artificial intelligence. However, the diverse set of heterogeneous processing cores, such as CPU, GPU, DSP, etc. usually found in these MPSoCs, make it challenging to identify the optimum resource allocation for different applications in order to achieve best performance and energy efficiency. The challenges are further exacerbated when the application domain also demands for reliability and security in these systems. Typically, these demands are fulfilled by performing complex design space exploration to identify the design points that achieve efficiency in all the required metrics.

The ever-increasing complexity of MPSoCs as well as the applications being developed for such platforms, calls for novel and efficient resource management methodologies. The purpose of this special session is to discuss state-of-the-art methodologies that consider metrics such as security, reliability and/or energy consumption for optimal allocation of software on MPSoCs, both at design and at run time.

Topics of interest include, but are not limited to:

- Model-based design methodology for heterogeneous MPSoCs
- Design Space Exploration considering optimization for one or more metrics such as accuracy, performance, energy consumption, reliability, and security.
- Compile-time scalable resource management of heterogeneous MPSoCs
- Run-time scalable resource management algorithms based on various techniques, for example machine learning, heuristics, etc.
- Approximate computing to achieve trade-offs for various metrics.

Submission Information:

Deadlines

- Abstract Submission: June 25, 2021
- Full Paper Submission: **June 25, 2021 (extended)**
- Acceptance Notification: July 30, 2021
- Camera-ready Paper: August 10, 2021

Paper

Paper length: Up to 8 pages double-column Template:

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