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The IEEE 12th MCSOC-2018 aims to provide world's premier forum of leading researchers in the Embedded Multicore/Many-core SoCs software, tools and applications design areas for academia and industries. From the 2018 edition, the MCSOC symposium targets new emerging topic related to multicore neuro-inspired computing architectures and systems. Prospective authors are invited to submit their contributions. Submission of a contribution implies that at least one of the authors will have a full registration to the symposium upon acceptance of his/her contribution. Submission can include, technical and experimental, theoretical, conceptual, or a survey. All submissions will be peer-reviewed on the basis of relevance, originality, importance, and clarity.

#### Topic of Interests

- **Programming:** Compilers, automatic code generation methods, cross assemblers, programming models, memory management, runtime management, object-oriented aspects, concurrent software.
- **Architectures:** Multicore/Many-core re-configurable platforms, memory management support, communication, protocols, real-time systems, SoCs and DSPs, heterogeneous architectures with HW accelerators and GPUs, deep-learning and neural networks.
- **Design:** Hardware specification, modeling, synthesis, low power simulation and analysis, reliability, variability compensation, thermal aware design, security issues.
- **Interconnection Networks:** Electronic/Photonic/RF NoC architectures, Power and energy issues in NoCs, Application specific NoC design, Timing, Synchronous /asynchronous communication, RTOS support for NoCs, modeling, simulation, NoC support for MCSOC, NoC for FPGAs and structured ASICs, NoC design tools, photonic components, virtual fabrications, photonic circuits, routing, filter design.
- **Testing:** Design-for-test, test synthesis, built-in-self-test, embedded test for MCSOC.
- **Packaging Technologies:** 3D VLSI packaging technology, vertical interconnections in 3D Electronics, periphery interconnection between stacked ICs, area interconnection between stacked ICs, thermal management schemes.
- **Real-Time Systems:** real-time system design, RTOS, compilation techniques, memory/cache optimization, interfacing and software issues, distributed real-time systems, real-time kernels, task scheduling, multitasking design.
- **Benchmarks:** Parallel benchmarks, workload characterization and evaluation
- **Applications:** Bio-medical, health-care, computational biology, Internet of Things, smart mobility, electric vehicles, smart and connected cars, aviation, automobile, military, consumer electronics, and novel applications.
- **Algorithms and Hardware for Learning On-chip:** Applications of learning on a smart mobile platform, and IoT; Sparse learning, feature extraction, and personalization; Deep learning with high-speed efficiency; Hardware acceleration for machine learning; Synaptic plasticity and neuron motifs of learning dynamics; Hardware emulation of brain; Architectures for neuromorphic computing.
- **Embedded Neuromorphic Computing Systems:** Conventional hardware (i.e. VLSI, FPGAs) and innovative hardware (i.e., memristor) implementation of Neuromorphic systems; Algorithm, and architecture co-optimization for efficient machine-learning hardware design; Models for neurons and synapses; Spiking neuro-inspired architectures building blocks; Reliable communication networks for neuro-inspired chips/systems; Reconfigurability and adaptability methods; Deep learning models; New applications of on-chip learning (i.e., mobile devices, IoT).

#### Proceedings Publication and Indexing

MCSOC-2018 proceedings will be published by IEEE CS Press, which will be included in the Computer Society Digital Library CSDL and IEEE Xplore. All CPS conference publications are also submitted for indexing to EI's engineering Information Index, Compendex, and ISI Thomson's Scientific and Technical Proceedings, ISTP/ISI Proceedings, and ISI Thomson.

#### Special Issues

Selected papers from the symposium will be invited to submit an extended version to the following journal. Papers will be selected based on their reviewers' scores and appropriateness to the Journal's theme. All extended versions will undergo reviews and must represent original unpublished research work.

#### Submission System

<http://edas.info/N24195>

#### Important Dates

- Abstract submission: **March 31, 2018**
- Full Paper submission: April 6, 2018
- Acceptance notification: June 23, 2018
- Camera-ready paper: July 14, 2018
- Registration date: July 14, 2018
- Symposium date: **September 12-14, 2018**

#### Contact

[mcsoc18@mcsoc-forum.org](mailto:mcsoc18@mcsoc-forum.org)



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