



# DSD 2019

## 22<sup>nd</sup> Euromicro Conference on Digital System Design Kallithea, Chalkidiki, Greece, August 28 - 30, 2019

### Call for Papers for Special Session *Applications, Architectures, Methods and Tools for Machine- and Deep Learning (AMDL)*

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Machine learning has numerous important applications in intelligent systems within many areas, like automotive, avionics, robotics, health-care, well-being, and security. The recent progress in Machine Learning (ML), and particularly in Deep Learning (DL), has dramatically improved the state-of-the-art in object detection, classification and recognition, and in many other domains. Whether it is superhuman performance in object recognition or beating human players in Go, the astonishing success of DL is achieved by deep neural networks. However, the complexity of DL networks for many practical applications can be huge, and their processing may demand a high computing effort and excessive energy consumption. Their training requires big data sets, making the training even orders of magnitude more intensive than their already very demanding inference phase. In DSD 2019 we plan to organize several oral sessions on deep learning and related research, as well as to have invited speeches, and a poster session.

#### SPECIAL SESSION SCOPE

We encourage you to submit papers related to advanced applications, architectures, methods and tools for ML and DL, especially related (but not limited) to the following topics:

- Architectural support for ML and DL, with emphasis on energy reduction, computation efficiency and/or computation flexibility, both for inference and/or for learning
- Spiking and brain-inspired neural networks and their implementation
- Efficient mapping of ML and DL applications to target architectures, including many-core, GPGPU, SIMD, FPGA, and HW accelerators
- New learning approaches for ML and DL, with emphasis on e.g. faster and more efficient learning, online learning, and quality of learning
- High-level programming language support for ML and DL
- Advanced applications exploiting ML or DL
- ML and DL for design automation
- Tools and frameworks for ML and DL
- Using of approximate computing to decrease the energy demands of ML and DL

#### SUBMISSION GUIDELINES

Authors are encouraged to submit their manuscripts to <https://easychair.org/conferences/?conf=dsd2019>. Should a web access problem occur, please contact the Program Chair by email ([dsd2019@easychair.org](mailto:dsd2019@easychair.org)). Each manuscript should include the complete paper text, all illustrations, and references. The manuscript should conform to the IEEE format: single-spaced, double column, US letter page size, 10-point size Times Roman font, up to 8 pages. In order to conduct a blind review, no indication of the authors' names should appear in the manuscript, references included.

IEEE CPS (Conference Publishing Services) publishes the (ISI indexed) DSD Proceedings, available worldwide through the IEEE Xplore Digital Library.

#### IMPORTANT DATES

**Deadline for paper submission: April 7 2019**  
**Notification of acceptance: June 1<sup>st</sup> 2019**  
**Camera ready papers: June 21<sup>st</sup> 2019**

#### MORE INFORMATION (WEB PAGES)

- **DSD 2019:** <http://dsd-seaa2019.csd.auth.gr>
- **Euromicro:** [www.euromicro.org](http://www.euromicro.org)