

**The 16th IEEE International Conference on Machine Learning and Applications
(IEEE ICMLA'17), Cancun, Mexico
18-21 December 2017
www.icmla-conference.org/icmla17**

**Special Session on
Machine Learning on Big Data**

AIMS AND SCOPE

The Special Session “Machine Learning on Big Data” (MLBD 2017) of the 16th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2017) follows the great success of MLBD 2016 of ICMLA 2016 and focuses on machine learning models, techniques and algorithms related to Big Data, a vibrant and challenging research context playing a leading role in the Machine Learning and Data Mining research communities. Big data is gaining attention from researchers, being driven among others by technological innovations (such as cloud interfaces) and novel paradigms (such as social networks). Devising and developing machine learning models, techniques and algorithms for big data represent a fundamental problem stirred-up by the tremendous range of critical applications incorporating machine learning tools in their core platforms. For example, in application settings where big data arise and machine is useful, we recognize, among other things: (i) machine-learning-based processing (e.g., acquisition, knowledge discovery, and so forth) over large-scale sensor networks introduces important advantages over classical data-management-based approaches; similarly, (ii) medical and e-health information systems usually include successful machine learning tools for processing and mining very large graphs modelling patient-to-disease, patient-to-doctor, and patient-to-therapy networks; (iii) genome data management and mining can gain important benefits from machine learning algorithms. Some hot topics in machine learning on big data include: (i) machine learning on unconventional big data sources (e.g., large-scale graphs in scientific applications, strongly-unstructured social networks, and so forth); (ii) machine learning over massive big data in distributed settings; (iii) scalable machine learning algorithms; (iv) deep learning – models, principles, issues; (v) machine-learning-based predictive approaches; (vi) machine-learning-based big data analytics; (vii) privacy-preserving machine learning on big data; (viii) temporal analysis and spatial analysis on big data; (ix) heterogeneous machine learning on big data; (x) novel applications of machine learning on big data (e.g., healthcare, cybersecurity, smart cities, and so forth).

The Special Session “Machine Learning on Big Data” (MLBD 2017) of the 16th IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2017) will be held in Cancun, Mexico, during December 18-21, 2017 and it aims to synergistically connect the research community and industry practitioners. It provides an international forum where scientific domain experts and Machine Learning and Data Mining researchers, practitioners and developers can share their findings in theoretical foundations, current methodologies, and practical experiences on Machine Learning on Big Data. MLBD 2017 will provide a stimulating environment to encourage discussion, fellowship, and exchange of ideas in all aspects of research related to Machine Learning on Big Data. This includes both original research contributions and insights from practical system design, implementation and evaluation, along

with new research directions and emerging application domains in the target area. An expected outcome from MLBD 2017 is the identification of new problems in the main topics, and moves to achieve consolidated solutions to already-known problems. Other goals are to help in creating a focused community of scientists who create and drive interest in the area of Machine Learning on Big Data, and additionally to continue on the success of the event across future years.

The MLBD 2017 special session focuses on all the research aspects of machine learning on Big Data. Among these, an unrestricted list includes:

- ❖ Fundamentals
- ❖ Modelling
- ❖ Statistical Approaches
- ❖ Novel Paradigms
- ❖ Innovative Techniques
- ❖ Algorithms
- ❖ Innovative Architectures (GPU, Clouds, Clusters)
- ❖ Non-Conventional Big Data Settings (e.g., Spatio-Temporal Big Data, Streaming Big Data, Graph Big Data, Cloud Big Data, Probabilistic Big Data, Uncertain Big Data)
- ❖ Systems
- ❖ Architectures
- ❖ Advanced Topics (e.g., Dimensionality Reduction, Matrix Approximation Algorithms, Multi-Task Learning, Semi-Supervised Learning, Integration with NoSQL Databases)
- ❖ Case Studies and Applications

Papers should be submitted for this special session at the regular paper submission website (<http://www.icmla-conference.org/icmla17/>). Papers should not exceed a maximum of 6 pages (including abstract, body, tables, figures, and references), and should be submitted as a pdf in 2-column IEEE format. Detailed instructions for submitting the papers are provided on the conference at home page. 2 additional pages are available in the final paper.

Special Session Chair

Prof. Alfredo Cuzzocrea

University of Trieste and ICAR-CNR, Italy

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Important Dates:

Paper Submission Deadline **August 12th, 2017**
Notification of Acceptance **September 9th, 2017**
Camera-Read Papers **October 1st, 2017**

If you have any question about this session, please do not hesitate to ask your question to alfredo.cuzzocrea@dia.units.it