



Distributed Learning Algorithms for Neural Networks

IJCNN 2016 Special Session

<http://ispac.diet.uniroma1.it/ijcnn-2016-special-session-distributed-nn>

SCOPE AND MOTIVATION

In the era of big data and pervasive computing, it is common that datasets are distributed over multiple and geographically distinct sources of information (e.g. distributed databases). In this respect, a major challenge is designing adaptive training algorithms in a distributed fashion, with only partial or no reliance on a centralized authority. Indeed, distributed learning is an important step to handle inference within several research areas, including sensor networks, parallel and commodity computing, distributed optimization, and many others.

Based on the idea that all the aforementioned research fields share many fundamental questions and mechanisms, this special session is intended to bring forth advances on distributed training for neural networks. We are interested in papers proposing novel algorithms and protocols for distributed training under multiple constraints, analyses of their theoretical aspects, and applications for multiple source data clustering, regression and classification.

TOPICS

The topics of interest to be covered by this Special Session include, but are not limited to:

- Distributed algorithms for training neural networks and kernel methods
- Theoretical aspects of distributed learning (e.g. fundamental communication constraints)
- Learning on commodity computing architectures and parallel execution frameworks (e.g. MapReduce, Storm)
- Energy efficient distributed learning
- Distributed semi-supervised and active learning
- Novel results on distributed optimization for machine learning
- Cooperative and competitive multi-agent learning
- Learning in realistic wireless sensor networks
- Distributed systems with privacy concerns (e.g. healthcare systems)

IMPORTANT DATES

- Paper submission deadline: **January 15, 2016**
- Notification of paper acceptance: March 15, 2016
- Camera-ready deadline: April 15, 2016
- Conference: July 25-29, 2016

ORGANIZERS

Massimo Panella
Simone Scardapane

Sapienza University of Rome
Sapienza University of Rome

massimo.panella@uniroma1.it
simone.scardapane@uniroma1.it