



## Call for Papers

### General Chairs

**Plamen Angelov**, Lancaster University, UK

**Yannis Manolopoulos**, Aristotle University of Thessaloniki, Greece

### Program Chairs

**Lazaros Iliadis**, Democritus University of Thrace, Greece

**Asim Roy**, Arizona State University, Tempe, USA

**Marley Vellasco**, PUC-Rio, Rio de Janeiro, Brazil

### Advisory Board

**Nikola Kasabov**, Auckland University of Technology, New Zealand

**Ali Minai**, University of Cincinnati, USA

**Danil Prokhorov**, Toyota Tech Center, Michigan, USA

**Theodore Trafalis**, University of Oklahoma, USA

**G. Kumar Venayagamoorthy**, Clemson University, USA

### Tutorials/Workshop Chairs

**Apostolos Papadopoulos**, Aristotle University of Thessaloniki, Greece

**Bernardete Ribeiro**, University of Coimbra, Portugal

### Poster Session Chair

**Yi Lu Murphy**, University of Michigan-Dearborn, USA

### Special Sessions Chairs

**Irwin King**, Chinese University of Hong Kong, China

**Luca Oneto**, University of Genoa, Italy

### Panel Chair

**Leonid Perlovsky**, Harvard University, Boston, USA

### Awards Chair

**Araceli Sanchis de Miguel**, Carlos III University, Spain

### Competitions Chair

**Adel Alimi**, University of Sfax, Tunisia

### Publication Chairs

**Mariette Awad**, American University of Beirut, Lebanon

**Danilo Mandic**, Imperial College, London, UK

### Publicity Chairs

**José Antonio Iglesias Martinez**, Carlos III University, Spain

**Simone Scardapane**, The Sapienza University of Rome, Italy

**Teck-Hou Teng**, Singapore Management University, Singapore

### International Liaison Chairs

**Petia Georgieva**, University of Aveiro, Portugal

**De-Shuang Huang**, Tongji University, Shanghai, China

### Local Organizing Committee

**Anastasios Gounaris**, Aristotle University of Thessaloniki, Greece

### Webmaster

**Yannis Karydis**, Ionian University, Greece

# The 2<sup>nd</sup> INNS Conference on Big Data 2016 October 23-25, 2016, Thessaloniki, Greece

**Big data** is not just about storage of and access to data. Analytics play a big role in making sense of that data and exploiting its value. But learning from big data has become a significant challenge and requires development of new types of algorithms. Most machine learning algorithms cannot easily scale up to big data. Plus there are challenges of high-dimensionality, velocity and variety.

The neural network field has historically focused on algorithms that learn in an online, incremental mode without requiring in-memory access to huge amounts of data. This type of learning is not only ideal for streaming data (as in the Industrial Internet or the Internet of Things), but could also be used on stored big data. Neural network technologies thus can become significant components of big data analytics platforms and this inaugural INNS Conference on Big Data will begin that collaborative adventure with big data and other learning technologies.

Thus the aim of this conference is to promote new advances and research directions in efficient and innovative algorithmic approaches to analyzing big data (e.g. deep networks, nature-inspired and brain-inspired algorithms), implementations on different computing platforms (e.g. neuromorphic, GPUs, clouds, clusters) and applications of Big Data Analytics to solve real-world problems (e.g. weather prediction, transportation, energy management).

### Invited Speakers

**Francesco Bonchi**, ISI Foundation, Torino, Italy

**Stephen Furber**, University of Manchester, UK

**Rudolf Kruse**, OVG University of Magdeburg, Germany

**Piotr Mirowski**, Google Deep Mind, London, UK

**Topics and Areas** include, but not limited to:

- Autonomous, online, incremental learning • theory, algorithms and applications in big data
- High dimensional data, feature selection, feature transformation • theory, algorithms and applications for big data
- Scalable algorithms for big data
- Learning algorithms for high-velocity streaming data
- Big data streams analytics
- Deep neural network learning
- Machine vision and big data
- Brain-machine interfaces and big data
- Cognitive modeling and big data
- Embodied robotics and big data
- Fuzzy systems and big data
- Evolutionary systems and big data
- Evolving systems for big data analytics
- Neuromorphic hardware for scalable machine learning
- Parallel and distributed computing for big data analytics (cloud, map-reduce, etc.)
- Big data and collective intelligence/collaborative learning
- Big data and hybrid systems
- Big data and self-aware systems
- Big Data and infrastructure
- Big data analytics and healthcare/medical applications
- Big data analytics and energy systems/smart grids
- Big data analytics and transportation systems
- Big data analytics in large sensor networks
- Big data and machine learning in computational biology, bioinformatics
- Recommendation systems/collaborative filtering for big data
- Big data visualization
- Online multimedia/ stream/ text analytics
- Link and graph mining
- Big data and cloud computing, large scale stream processing on the cloud

### Paper Submission and Publication

Original works submitted as a regular paper limited to a maximum of 10 pages in Springer format will be published in the proceedings to be available electronically as a Springer book in ADVANCES IN INTELLIGENT SYSTEMS AND COMPUTING Series, to download for delegates.

It will be peer-reviewed by at least three PC members on the basis of technical quality, relevance, originality, significance and clarity. At least one author of an accepted submission to the conference should register with a regular fee to present their work at the conference.

A number of papers will be selected after the conference for possible inclusion in a special issue of the BIG DATA RESEARCH Journal (Elsevier).

### Awards

Best papers will be selected and awarded as follows:

- Best regular paper
- Best student paper

This will be based on a combination of reviewers' comments, presentations and importance and quality judged by a panel. Best paper awards (500 Euros) are donated by the sponsor Springer Verlag, Germany and will be commemorated by a certificate.

### Important Dates

Tutorial and workshops proposals:	February 15 <sup>th</sup> , 2016
Notification of tutorial and workshops proposals:	February 20 <sup>th</sup> , 2016
Paper submission:	April 30 <sup>th</sup> , 2016
Notification of paper acceptance:	May 30 <sup>th</sup> , 2016
Camera-ready submission (AISC):	June 11 <sup>th</sup> , 2016
Early registration:	June 20 <sup>th</sup> , 2016
Registration deadline: papers without confirmed registration by	June 24 <sup>th</sup> 2016
risk their inclusion in the proceedings.	

### Co-Sponsors



INTERNATIONAL NEURAL NETWORK SOCIETY



Springer