



## SMC 2014 Special Session Call for Papers Computational Intelligence Methods for Big Data Processing

<http://www.smc2014.org>

### Special Session organizer

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### Important Dates

- April 7, 2014  
Deadline for submission  
of full-length papers
- May 25, 2014  
Acceptance/rejection  
notification
- July 9, 2014  
Final camera-ready  
papers due in electronic  
form

### Introduction

Big data refers to a collection of data sets which is too large and complex to be directly processed using on-hand database management tools or traditional data processing techniques. With the rapid development of information technology and the decrease of cost on collecting and storing data, big data has been generated from scientific fields, industry, business sector, governmental department, and internet. Usually, the important issue in data processing is to harness relevant data and use it to make the best decisions. However, for big data, it is difficult to find the most valuable pieces of information as the amount of data is becoming so large. Therefore, it is desired to develop a new generation of technologies and architectures to economically extract value from very large volumes of a wide variety of data by enabling high velocity capture, discovery, and analysis.

As a set of nature-inspired computational methodologies and approaches, computational intelligence enables intelligent behavior in complex and changing environments. Generally, it includes artificial neural networks, fuzzy systems, evolutionary computing, swarm intelligence and rough sets, and also embraces broader fields such as image processing, data mining, and natural language processing. In practice, computational intelligence methods have been applied successfully to solve complex real-world problems to which traditional approaches are ineffective. Therefore, they are regarded as promising techniques for big data processing.

This special session aims at discussing and presenting the latest development on computational intelligence methods for big data processing. Original contributions that provide novel theories, frameworks, and solutions to challenging problems of big data processing will be solicited for this special session.

### Indicative Topics/Areas

- Application of neural networks, fuzzy logic, rough sets, evolutionary computing, and swarm intelligence in big data analysis
- Nature-inspired techniques for big data processing
- Parallel and distributed methods for knowledge discovery
- Adaptive and evolving learning methodologies for big data analysis
- Uncertainty modeling in learning from big data
- Multiple learning models
- Active and semi-supervised learning strategies
- Data stream mining
- Interactive learning and imbalance learning on big data
- Intelligent data preprocessing
- Random weighted networks and transfer learning on big data
- Data size and feature space adaptation
- Intelligent techniques in big data classification/clustering

### Submission

Manuscripts for a Special Session should NOT be submitted in duplication to any other regular or special sessions and should be submitted to SMC 2014 main conference online submission system on SMC 2014 conference website.

All submitted papers of Special Sessions have to undergo the same review process (three completed reviews per paper). The technical reviewers for each Special Session paper will be members of the SMC 2014 Program Committee and qualified peer-reviewers to be nominated by the Special Session organizers.