



IJCIS: Call for Papers Special Issue
“Advanced Developments in Machine Learning
and Optimization for Heterogeneous Data Analytics”



Guest Editors:

Prof. Nian Zhang, University of the District of Columbia, Washington, D.C., USA.
nzhang@udc.edu

Prof. Qingshan Liu, Southeast University, Nanjing, Jiangsu, China. qslu@seu.edu.cn

Prof. Zhishan Guo, University of Central Florida, Orlando, Florida, USA. zsguo@ucf.edu

Aims and Scope

Recent advances in storage, hardware, information technology, communication, and networking have resulted in increasingly large and complex heterogeneous data. This has powered the demand to extract useful and actionable insights from data in an automatic, reliable and scalable way. Neural networks are widely used learning machines with powerful learning ability and adaptability, which have achieved remarkable performance in the data analytical tasks, such as computer vision, face/speech recognition, video surveillance, document summarization, distributed and/or real-time resource allocation, etc. Recently there is a surge of research activities devoted to theoretical development of scalable and robust learning models on deep neural networks, neurodynamics, and combinatorial optimization techniques.

This special issue aims to present the latest theoretical and technical advancements in the broad area of neural networks and learning systems for heterogeneous data computing. Potential topics include but are not limited to the following:

- Neural networks model and learning algorithms
- Classification, clustering, and regression
- Imbalanced data learning
- Deep neural networks and learning
- Neurodynamic optimization
- Distributed optimization
- Applications of neural networks in data analytics and time series forecasting and analysis

Main topics and quality control

This special issue is dedicated to a set of best papers in the field of machine learning and optimization for data analytics. Full papers will be subject to a strict review procedure for final selection to this special issue based on the following criteria:

1. Quality and originality in theory and methodology of machine learning and optimization for data analytics;
2. Relevance to machine learning and optimization research area, such as
 - a. Neural networks model and learning algorithms;
 - b. Classification, clustering, and regression;
 - c. Imbalanced data learning;
 - d. Deep neural networks and learning;



IJCIS: Call for Papers Special Issue
“Advanced Developments in Machine Learning
and Optimization for Heterogeneous Data Analytics”



- e. Neurodynamic optimization;
 - f. Distributed optimization.
3. Application orientation which exhibits originality and machine learning and optimization theory, such as
- a. Neural networks and learning systems for specialized problem-solving and various applications in big data analysis and time series forecasting and analysis.
4. If there is an implementation, the details of the implementation must be provided;
5. Extended papers must contain at least 40% new material (qualitative) relative to the conference paper.

Important Dates

Submission of papers:	27 March 2020
Notification of review results:	30 June 2020
Submission of revised papers:	30 August 2020
Notification of final review results:	30 September 2020

Submit your paper

All papers have to be submitted via the Editorial Manager online submission and peer review system. Instructions will be provided on screen and you will be stepwise guided through the process of uploading all the relevant article details and files associated with your submission. All manuscripts must be in the English language.

To access the online submission site for the journal, please visit <https://www.editorialmanager.com/ij-cis/default.aspx>. Note that if this is the first time that you submit to the International Journal of Computational Intelligence Systems, you need to register as a user of the system first.

NOTE : Before submitting your paper, please make sure to review the journal's [Author Guidelines](#) first.

Introduction of the guest editor(s)

Dr. Nian Zhang is a Professor in the Department of Electrical & Computer Engineering at the University of the District of Columbia. She is an Office of Naval Research (ONR) Research Faculty Fellow. Her research interests include neural networks and their applications on classification, clustering, and optimization, time series prediction, and pattern recognition. She has received the Best Paper Award in FUZZ-IEEE 2003. Dr. Zhang is an Associate Editor of the IEEE Transactions on Cybernetics. She is also an Associate Editor of the IEEE Transactions on Neural Networks and Learning Systems. She has served as an Associate Editor of the IEEE Transactions on Neural Networks and Learning Systems from 2010-2015. She has served as a Guest Editor for the Computational Intelligence and Neuroscience. She has also served as a Guest Editor for the International Journal of Systems, Control and Communications (IJSCC), Special Issue on Pattern



IJCIS: Call for Papers Special Issue

“Advanced Developments in Machine Learning



and Optimization for Heterogeneous Data Analytics”

Recognition and Intelligent Systems and Control. In addition, Dr. Zhang has served as the Program Chair of the 17th International Symposium on Neural Networks (ISNN 2020), the 9th International Conference on Information Science and Technology (ICIST 2019), the Eleventh International Conference on Advanced Computational Intelligence (ICACI 2019), and the Sixth International Symposium on Neural Networks (ISNN 2009). She served as the Conference Chair of the 2018 ASEE Mid-Atlantic Spring Conference. She has served as a Publications Chair or Special Sessions Chair in more than 35 international conferences. She is the Vice Chair of IEEE Computational Intelligence Society (CIS) Adaptive Dynamic Programming and Reinforcement Learning Technical Committee, and Vice Chair of IEEE CIS Emergent Technologies Technical Committee (ETTC). Dr. Zhang has served as a Panelist for the National Science Foundation and NASA Experimental Program to Stimulate Competitive Research (EPSCoR).

Dr. Qingshan Liu is a Professor in the School of Mathematics at the Southeast University, and the Jiangsu Provincial Key Laboratory of Networked Collective Intelligence, Nanjing, China. He received the Ph. D. degree in automation and computer-aided engineering from the Chinese University of Hong Kong. His research interests include optimization theory and applications, artificial neural networks, computational intelligence, and multi-agent systems. He has published over twenty articles in IEEE Transactions, including IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, IEEE Transactions on Automatic Control, and IEEE Transactions on Systems, Man, and Cybernetics: Systems. He achieved the IEEE Transactions on Neural Networks Outstanding Paper Award (with Prof. Jun Wang) in 2011. Dr. Liu is an Associate Editor of the IEEE Transactions on Cybernetics and IEEE Transactions on Neural Networks and Learning Systems, and is a member of the Editorial Board of Neural Networks. He has served as a Guest Editor for several special issues in the journals, including Neural Processing Letters, Neurocomputing, Cognitive Computation, Mathematics and Computers in Simulation. In addition, Dr. Liu has served as the Program Chair of the 13th International Symposium on Neural Networks (ISNN 2016), the Eighth International Conference on Advanced Computational Intelligence (ICACI 2016), the 22nd International Conference on Neural Information Processing (ICONIP 2015). He has served as the Publications Chair or Special Sessions Chair for several international conferences, such as the 2019 IEEE Symposium Series on Computational Intelligence (IEEE SSCI), the 14th International Symposium on Neural Networks (ISNN 2017), the Seventh International Conference on Information Science and Technology (ICIST 2017).

Dr. Zhishan Guo is an Assistant Professor in the Department of Electrical & Computer Engineering at the University of Central Florida. He received the B. Eng. degree (with honor) in computer science and technology from Tsinghua University, Beijing, China, in 2009, the M. Phil. degree in mechanical and automation engineering from the Chinese University of Hong Kong, Hong Kong, in 2011, and the Ph. D. degree in computer science from the University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, in 2016. His research interests include real-time scheduling, neural networks, and their applications in cyber-physical systems. His publication over the past eight years include eight RTSS papers, one AAAI paper, one IJCAI paper, one SIG KDD paper, and four TNNLS papers. He is a recipient of the NSF CISE Research Initiation Initiative (CRII) award. Dr. Guo has served as the Program Chair of International Workshop on Mixed



IJCIS: Call for Papers Special Issue
“Advanced Developments in Machine Learning



and Optimization for Heterogeneous Data Analytics”

Criticality Systems Workshop (WMC 2018, WMC 2019) and the Local Chair of IEEE International Conference on Industrial Internet (ICII 2019). He has served as the Program Committee Member of many conferences, including IEEE Real-Time Systems Symposium (RTSS), AAAI Conference on Artificial Intelligence (AAAI), IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), International Conference on Embedded Software (EMSOFT). He is a member of the IEEE CIS Emergent Technologies Technical Committee (ETTC). Dr. Guo has served as a Panelist for the National Science Foundation (NSF).