Editorial

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Biographical notes: Shahaboddin Shamshirband is an Adjunct Professor at Ton Duc Thang University, Vietnam, Adjunct Faculty at Iran Science and Technology University, IRAN, academic faculty at IAUC, IRAN, faculty member at University of Malaya, Malaysia, and Post Doc Research Fellow. He is an associate editor, guest editor, and reviewer of high-quality journals and conferences. He is a senior member of IEEE (SMIEEE) and he is a member of ACM and IET. He received an award for top 1% scientists in the world in 2017–2018 based on Essential Science Indicators (Thomson Reuters-ESI-ISI). He has worked on various funded projects. He is on the editorial board of journals and has served as guest editor for journals. His major academic interests are in computational intelligence, data mining in multidisciplinary fields. His articles are ranked in the highly cited papers and most downloaded papers from the top 10 % (2013 till now) in Computer Science according to the WoS.

Manuel Herrera is a Research Associate in distributed intelligent systems at the Institute for Manufacturing at the University of Cambridge (UK). His research interests extend to challenges related to time-series mining, complex networks and geometric deep learning to support the decision-making process for smart and resilient cities. Currently, he is participating in an EPSRC and BT prosperity partnership project where he works on multi-agent systems and temporal networks for enhancing the monitor, control and, ultimately, the

resilience of the national telecommunications infrastructure. He is a Fellow of the Royal Statistical Society and a member of the Complex Systems Society.

Mohammad Shojafar received his PhD at the Sapienza University of Rome in 2016, with an 'excellent' degree. He is an author/co-author of several peer-reviewed publications in well-known conferences (e.g., IEEE ICC, GLOBECOM, ISCC, SOFTCOM) and journals in IEEE, Elsevier and Springer publishers. He served as TPC in several conferences such as Scalcom, IBICA, and as a reviewer for several IEEE transactions and Elsevier journals. Since 2013, he is the membership of IEEE Systems Man and Cybernetics Society Technical Committee on Soft Computing. His current research focuses on distributed computing, network management, wireless communications, and mathematical/AI optimisation.

When we deconstruct a complex problem we often find patterns among the smaller problems we create. The patterns are similarities or characteristics that some of the problems share. Pattern recognition is one of the four cornerstones of computer science. It involves finding the similarities or patterns among small, deconstruct problems that can help us solve more complex problems more efficiently. Pattern recognition is a branch of machine learning that focuses on the recognition of patterns and regularities in data, although it is in some cases considered to be nearly synonymous with machine learning. Pattern recognition systems are in many cases trained from labelled 'training' data (supervised learning), but when no labelled data are available other algorithms can be used to discover previously unknown patterns (unsupervised) learning. Soft computing is a collection of methodologies, which aim to exploit tolerance for imprecision, uncertainty and partial truth to achieve tractability, robustness and low solution cost. Soft computing is likely to play an important role in science and engineering in the future. The successful applications of soft computing and the rapid growth suggest that the impact of soft computing will be felt increasingly in the coming years. Soft computing encourages the integration of soft computing techniques and tools into both every day and advanced applications.

This special issue consists of seven research articles, which are the extended version of the papers presented at 3rd International Conference on Knowledge-Based Engineering and Innovation (KBEI-2016). Indeed, the first article stems on presetting a fuzzy linear programming model that is applied in project scheduling considering risk and resources constraints under uncertain environment. Whilst, the second paper presents a new approach for modelling and identification of electrochemical systems that is focused on the batteries in impedance state. The third paper aims to present new density-based clustering scheme in wireless sensor network and validated it in terms of lifetime and total packet delivery against existing ones. The fourth paper addresses new combined organisational model based on the benefits and weak points of current organisational models in which a coordination mechanism is tuned using ant colony. The fifth paper studied the performance of two newly presented adaptive algorithms in which P-norm constraint is considered in defining cost function and validated based on the steady-state and transient mean square deviation (MSD) criterions. The sixth paper claimed NSGA-II method for energy-aware intra-domain traffic engineering and tried to make a trade-off between maximum link utilisation (MLU) and energy reservation. Finally, the last paper of this SI surveys the data-mining algorithm for diagnosis and prognosis heat disease as

an automatic intelligent heart disease prediction system and analysed the various cardiograph data to cover a range of disorders that affect the heart.

The 3rd International Conference on Knowledge-Based Engineering and Innovation (KBEI-2016), from which this special issue has been derived, was converged in the field of Mechatronics, Electrical and Computer Engineering, was jointly organised by the Department of Mechatronics, Electrical and Computer Engineering at Iran University Science and Technology University, Iran, in 30 December 2016. KBEI-2016 has attracted renowned academicians/researchers, noted industry representatives and the delegates from countries like Turkey, UAE, China, and India.

We would like to express our sincere thanks to all the authors for contributing their valuable articles in this special issue. Finally, we would like to acknowledge the conference organising committee and reviewers from *IJAIP*, without their expert advice and diligent reviews this special issue would not have been possible.