
Editorial

Giuseppe Fenza

Department of Management and Innovation Systems (DISA-MIS),
University of Salerno,
Via Giovanni Paolo II, 132, 84084, Fisciano SA, Italy
Email: gfenza@unisa.it

Biographical notes: Giuseppe Fenza completed his PhD in Computer Sciences from the University of Salerno, Italy, in 2009. He is a member of the IEEE Computational Intelligence Society and IEEE Systems, Man, and Cybernetics Society. He is a reviewer for different reputable journals from Elsevier, InderScience, etc. He has many publications in fuzzy decision making, knowledge extraction and management, situation and context awareness, semantic information retrieval, service oriented architecture and so forth. Recently, he is working in the field of time-aware and context-aware data analysis over big data stream coming from social media. He is currently an Assistant Professor in Computer Science at the University of Salerno.

1 Introduction

Welcome to this special issue of *IJHPSA*. Data streams mining and processing challenged are attracting much attention in the era of big data and methodologies, architectures have quite wide applications. We received several paper submissions, which were all peer-reviewed by ten professional reviewers. Finally, 11 papers were accepted for publication in this special issue. The accepted papers came from different domains, smart grid, internet of things, security in big data processing, people trajectories analysis, video target tracking and so forth.

More in detail, the first paper accepted perform behavioural patterns discovery for creating predictive space and time models by analysing the influence of the physical and chemical variables in the water quality on historical data stream of measurements on the Bogota River in a certain period.

The second paper focuses on the impact uncertainty on remanufacturing product quality and experiment measurement of uncertainty for reassembly dimensions based on entropy.

The third paper focuses on the interoperability and integration of big data sensor data stream in smart grid domain. The authors define a common ontology-based language for supporting communication among different elements of a power system. The resulting ontology has been instantiated by using a case study on a real power flow problem.

The fourth paper provides a systematic review of big data analytics and internet of things focusing on real-time feature of the IoT systems. The authors analyse the state of the arts and trigger broader discussion regarding future research agenda both in practice and in theory.

The fifth paper proposes a prediction model of component relevance, by adopting an optimised version of the artificial bee colony algorithm (OABC) on the containerised microservice scheduling. The experimental

results are promising with respect to the artificial bee colony algorithm and the greedy algorithm for cluster load balancing and service response time aspects.

The authors of the sixth paper focus on security on social network. They proposed to outsource the computation of functional encryption to cloud server by providing single transformation key saving a lot of bandwidth and decryption time.

The seventh paper is centred on the problem of dynamic threat assessment for warship formation when the observation data are easy to be missing. A data analysis method about threat assessment is proposed, it is based on discrete dynamic Bayesian networks (DDBN) and the utility theory.

The eighth paper proposes a video target tracking algorithm that detects the moving target in a video sequence through significance joint probability association. Experimental results in real scenes demonstrate that the proposed algorithm can suppress clutter in the background, simplify interconnected events and solve the problem of computational combinatorial explosion.

In the ninth paper, the authors experiment two novel weighting schemes for latent Dirichlet allocation (LDA): a word-weighted scheme and a topic-weighted scheme. Experimental results show the improvement of the original LDA.

In the tenth paper, the authors focus on the study of trajectories followed by the people. The data of trajectories are large and continuously can be considered as a data stream. This paper discussed the trajectory data flow form physiological and psychological factors of people.

The eleventh paper focuses on the reliability of parallel big data processing. The authors propose a multi-threaded time sequence analysis approach based on type-2 fuzzy logic and hidden Markov model. To experimental results show the average deviation using type-2 fuzzy logic is less than one fourth of the average deviation using type-1 fuzzy logic.

Many thanks to the authors who submitted their excellent research works to this special issue and all the reviewers who offered their time and provided numerous useful comments to make the submitted research works much better. Further, this special issue could not have been published without a publisher. We wish to thank the editors of the *International Journal of High Performance Systems Architecture* for their efforts and support.