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Guest Editorial: Special Section: Advances in Information Technology

The special section on recent advances in information technology has attracted a wide range of articles on technology theory, applications from many aspects, and design methods of information technology. Reviewing the papers in this special section, it is clear that many diverse fields such as computer science, cloud computing, wireless sensor networks, prediction, image annotation, and storage have been involved. The articles about recent advances in information technology tackled significant recent developments in the fields mentioned above, both of a foundational and applicable character.

Also, we can easily find that most contributors regard "information technology" as synonymous with tools such as the computer, mobile phone, and tablet and such issues as instructional design, mobile learning, social networking, and open source. Through the topic's development, research designs are appropriate for studying the potential of information technology applications under controlled situations.

In this section, eleven papers have been selected for publication. All selected papers followed the same standard (peer-reviewed by at least three independent reviewers) as applied to regular submissions. They have been selected based on their quality and their relation to the scope of the special section.

In the paper entitled "Construction of Affective Education in Mobile Learning: The Study Based on Learner's Interest and Emotion Recognition" Haijian Chen et al. propose the framework of affective education based on learner's interest and emotion recognition. Learner's voice, text and behavior log data are firstly preprocessed, then association rule analysis, SO-PMI (Semantic Orientation-Pointwise Mutual Information) and ANN-DL (Artificial Neural Network with Deep Learning) methods are applied to learner's interest mining and emotion recognition.

In the paper entitled "A Retrieval Algorithm of Encrypted Speech based on Syllable-level Perceptual Hashing" Shaofang He et al. propose a syllable-level perceptual hashing-based retrieval method. Different from the existing methods, the posterior probability features based on acoustic segment models of syllable are used to generate a perceptual hashing sequence, which is then embedded into encrypted speech as a digital watermark.

The paper entitled "A Novel Link Quality Prediction Algorithm for Wireless Sensor Networks" by Chenhao Jia et al. proposes a cloud reasoning-based link quality prediction algorithm based on multiple parameters, which classifies link quality parameters according to the cloud model. This algorithm overcomes the subjectivity of link quality classification, as different link quality parameters can represent different aspects of link quality.

In the paper entitled "Connected Model for Opportunistic Sensor Network Based on Katz Centrality" Jian Shu et al. consider the central characteristics of the sink node, the connectivity of OSNs is modeled by time graph, according to the characteristics of OSNs. The experimental results show that the proposed network connectivity model can reflect the connectivity of the whole network in different scenarios.

Regarding the paper entitled "An Improved Artificial Bee Colony Algorithm with Elite-Guided Search Equations" by Zhenxin Du et al.: In order to increase the exploitation ability of the ABC elite and seek a better balance between the abilities of exploration and exploitation, an improved ABC elite (the IABC elite) algorithm is put forward in this paper, combining two novel search equation and a new parameter with ABC elite.

The paper entitled "A DDoS Attack Detection System Based on Spark Framework" by Dezhi Han et al. presents a DDoS detection system based on Spark, to ensure accuracy in detection. In the meanwhile, the time for detecting DDoS attacks is reduced and the detection efficiency is improved significantly with the advantage of Spark technology.

The paper entitled "A Kernel Based True Online Sarsa(Λ) for Continuous Space Control Problems" by Fei Zhu et al. presents TOSarsa(Λ) algorithm with the dual heuristic dynamic programming algorithm to improve policy learning speed of policy search algorithms by replacing approximating using a neural network method with approximating using the kernel method.

The paper entitled "Social Evaluation of Innovative Drugs: A Method Based on Big Data Analytics" by Genghui Dai et al. presents a Hadoop platform and explored the social evaluation method of innovative drugs based on big data analytics. It aimed to provide the supplementary information for a comprehensive review on innovative drugs, as well as to make up the defects of a regular post-marketing evaluation.

The paper entitled "Sentiment Information Extraction of Comparative Sentences Based on CRF Model" by Wei Wang et al. introduces the conditional random fields model to extraction of Chinese comparative information and focuses on the task of element extraction from comparative sentences. The conditional random fields model is employed to extract comparative elements, which fuses various lexical, syntactic and heuristic features.

The paper entitled "Distinguishing Flooding Distributed Denial of Service from Flash Crowds Using Four Data Mining Approaches" by Bin Kong et al. proposes a new method that employs data mining approaches to discriminate between DDoS attacks and FCs. Experiments are conducted to evaluate the proposed method based on two real-world datasets.

The paper entitled "Building a Lightweight Testbed Using Devices in Personal Area Networks" by Qiaozhi Xu et al. proposes the design and implementation of the prototype of PANBED, building a small-scale personal testbed for users utilizing devices in their own personal area networks (PANs). The experiment results show that PANBED allows users to set up different network scenes to test applications easily using a home router, PCs, mobile phones and other devices.

In particular, we would like to acknowledge the program committee members of Ninth International Symposium on Information Processing (ISIP 2016) and 2016 IEEE International Workshop on Trust and Security in Wireless Sensor Networks (Trust WSN 2016), in conjunction with "The 15th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom 2016). This section contains revised and expanded versions of selected quality papers presented at the Ninth International Symposium on Information Processing (ISIP 2016). ISIP 2016 took place on August 20-21, 2016, in Changsha, China, and was cosponsored by Shanghai Institute of Electronics, China; Jishou University, China;

Peoples' Friendship University of Russia, Russia; South China University of Technology, China; Feng Chia University, Taiwan; Henan Polytechnic University, China; Nanchang Hangkong University, China; and Jiangxi University of Science and Technology, China. In closing, we would like to take this opportunity to thank the authors for the efforts they put in the preparation of the manuscripts and in keeping the deadlines set by editorial requirements. We hope that you will enjoy reading papers from this special section as much as we did putting it together.

We would also like to thank Prof. Mirjana Ivanović, the editor-in chief of ComSIS, for her support during the preparation of this special section in the journal.

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