Guest Editorial: Special Issue on "Journal of Internet Technology for TANET 2017"

Chao-Tung Yang

The theme of the TANET 2017 conference focuses on "Artificial intelligence, Big data and Collaboration (ABC) in Next Generation Networks". In addition, this year also includes topics in recent technological advancements, including cloud technology, TANet 100G optical network applications and services, information security, personal data protection, school administration systems and smart campus innovation, digital gaps, digital care and digital opportunities, K12 Information Education and Teaching, FinTech, Internet of Things. We look forward to inviting the interaction of experts and scholars in the industry, government, academia, information service staff of Taiwan area network, and network practitioners to discuss the development of a smart, innovative and secure Information environment.

With the evolution of technology trends, the collaborative application of artificial intelligence, and big data in the new century and cloud computing applications are indicators of future competitiveness. New technologies bring new thinking, and IT managers must also keep up with the trend of technology. Not only does it have sufficient bandwidth to meet the high-speed transmission needs of cloud computing and vast amounts of data, but it also refers to emerging technologies that face different challenges in the real-time setting. Moreover, such multidisciplinary work should help shape and help people to adopt the technology in the right direction without any difficulties.

Topics of this special issue include new mobile internet and network security vulnerabilities and risks, security issues, and protocols for mobile internet and networks, confidentiality and trust for mobile internet and networks, security for cross-layer transfers, security for vertical transfers in heterogeneous networks, security for 4G and 5G networks, security for IoT and wearable devices.

Five articles of particular interest have been selected for this special issue, as they present the most interesting research on the subject of this specific issue.

The paper entitled "On the Retention Rate of Top Talkers for Sampled NetFlow" presented an analysis of 28 days of NetFlow data in a Taiwan Academic Network network region. In their experiments, the disparity between different sampling rates in the IP address and top talkers was investigated. The results show that NetFlow sampling affects the retention rate of IP addresses as well as the retention rates by bytes and packets of top talkers. The higher the sampling rate, the higher the impact.

The paper entitled "Concept Drift Detection Based on Pre-Clustering and Statistical Testing" demonstrated a method of drift detection based on the statistical test with clustering and pre-processing feature extraction. The purpose is to reduce the detection time by using the feature selection method with the principal component analysis (PCA). The experimental results on synthetic and real-world streaming data show that pre-processing clustering enhances drift detection performance. However, in terms of execution time, features extraction trade-off an insignificant speed-up detection performance.

The paper entitled "Suspected Vehicle Detection for Driving without License Plate Using Symmelets and Edge Connectivity" proposed a new suspected vehicle detection (SVD) method to identify vehicles without a license plate driving on the streets. In their experiments, they detect vehicles in a still image by using a symmelet-based approach that helps for assessing the region of interest (ROIs) of a vehicle. The SVD method has two benefits; no need to subtract the background of the image from the analysis and the system does not need a GPU to be used.

The paper entitled "A Smart Service Warehousing Platform Supporting Big Data Deep Learning Modeling Analysis" aims to improve the service quality of the smart health system and to evaluate and prepare risk factors leading to diabetes and kidney disease. Also, it provides efficient forecasting and serves a reliable and intelligent service warehouse system, which is a service framework and a middle layer. Doctors are equipped with the mathematical prediction model to facilitate the care of their patients. In the end, they tested the product platform's accessibility and effectiveness from the hospital data.

The paper entitled "Implementing triple entry accounting system with π account on block-chain protocol" redefined the phrase "triple entry accounting" with the blockchain protocol. A new π-account definition is introduced to visualize and evaluate the accounting book's journal entry and obtain

*Corresponding Author: Chao-Tung Yang; E-mail: ctyang@thu.edu.tw

a complete picture of blockchain economic operation. The international accounting standard also implements a hierarchical deterministic structure on blockchain protocol mapping into a book account structure. The results indicated that the distributed ledger technology has fully incorporated both internal and external straight-through processing.

We believe that all papers included in this Special Issue will be of particular importance for future scientific research work, as well as contributing to the studies carried out by other researchers and engineers working in advanced mobile security technologies. We would like to express our sincere appreciation for all the writers' valuable contributions. Our special thanks go to the editor-in-chief of the Journal of Internet Technology (JIT), President Han-Chie Chao, for allowing us to publish this Special Issue, and for his strong support throughout the entire publishing process.

Guest Editor

Chao-Tung Yang is a Life-time Distinguished Professor of Computer Science at Tunghai University in Taiwan. He received his Ph.D. in computer science from National Chiao Tung University in July 1996. In August 2001, he joined the Faculty of the Department of Computer Science at Tunghai University. He is serving on a number of journal editorial boards, including Future Generation Computer Systems, International Journal of Communication Systems, KSII Transactions on Internet and Information Systems, Journal of Cloud Computing. He won Outstanding ICT Elite Award in 2018, Ministry of Science and Technology Outstanding Achievement Awards and the Excellent Awards many times, and the Ministry of Education Excellent Course Award in 2020. He has published more than 350 papers in journals, book chapters and conference proceedings. His present research interests are in cloud computing, big data, edge computing and deep learning. He is a member of the IEEE Computer Society, IET, IICM, and TACC.