Guest Editorial
Selected Papers from ICCE-TW 2019

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The next generation communication and network technologies, such as 5G and SDN, continue to emerge to support massive users connectivity and multigigabits downloading speeds. These new communication technologies are required to support ultra-reliable and low-latency communications. Moreover, to cope with advances of machine learning (ML), artificial intelligence (AI) technologies are raging around the world, especially deep learning (DL), and this trend has proved the values of these technologies in a wide range of applications. The development further reveals that AI technologies will combine with sensors so that traditional sensors can be more intelligent to respond differently to different needs. The contribution of the articles included in this issue will be explained below.

The contribution entitled as "High Efficient Secure Data Deduplication Method for Cloud Computing" by Guo et al. proposed a deduplication scheme based on ownership challenge and proxy re-encryption to enhance its security performance, specifically to increase its resistance to brute-force attacks from CSP. The authors show the scheme can ease the burden on cloud storage servers because it allows servers not to maintain multiple copies of the same data. The cost is to take up some extra storage space to save the user's public key and the data tag that helps the CSP search for duplicate data, and the encrypted DEK. This scheme has the flexibility to control access to encrypted data. And to support the update of encrypted data, new keys can be easily issued by CSPs to qualified users at low cost.

In the paper entitled "Learning with Concept Drift Detection based on Sub-concepts from k Time Sub Windows" by Liu et al. presented the idea of a concept-drift detection method based on sub concepts. The authors proposed a method divides the data from a whole time window into k time sub-concept windows. Three schemes are proposed to improve the performance of error rate-based concept drift detection algorithms. The advantage is that it can take full advantage of any knowledge it has of the sub-concepts structure to detect sub-concepts drift that maybe be ignored by the whole time window methods.

The title of the third is "Judging for Barrier Lakes Based on Color Constancy Color Index Similarity Measure" by Wu et al.. In this paper, authors considered the three-point positioning and river binary image judgment before and after the earthquake to judge whether the river is blocked. The authors attribute it to the following reasons. Texture extraction is susceptible to interference from various textures in complex environments. The data set used in this experiment describes that the part of the river is too small to be segmented using neural networks. In this case, only the color of the river can be used as the only distinctive feature distinguishing itself from the environment, so it is very effective to compare the color based on the color of the adjacent position.

The fourth paper is "Smart Hat: Design and Implementation of a Wearable Learning Device for Kids using AI and IoTs Techniques." Chang et al. designed and implemented a wearable Smart Hat, which mainly applies the IoT and AI technologies, to help kids pursue knowledge in an active, positive and aggressive manner. Compared to traditional learning, the authors' proposed strategy is proven to increase kids learning capability with great memorization skills and the kids will be more fascinated to learn new things by using the Smart Hat.

Finally, the contribution entitled as "The Pest and Disease Identification in the Growth of Sweet Peppers Using Faster R-CNN and Mask R-CNN" by Lin used the deep learning-based image detection technologies. Various pest and disease knowledge and image data were integrated with image detection technologies to develop an accurate identification model for plant disease diagnosis. The proposed method which is designed to assist farmers in controlling pests and diseases can provide instant information and thus reduce the extent of harm and losses.

We believe that all papers included in this Special Issue will have an excellent and valuable scientific contributions. We would like to express our sincere appreciation to all authors for their valuable contributions. Our special thanks go to Professor Han-Chieh Chao, Editor-in-Chief of the Journal of Internet Technology (JIT), for allowing us to publish this Special Issue, and for his strong supports throughout the entire publication process. We are very proud for the final outcome of our joint efforts, and believe that readers of JIT and other audiences will value our contributions

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Guest Editors

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