Guest Editorial Preface

Special Issue of Intelligent Techniques and Tools for Multimedia Processing

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Multimedia content is growing exponentially in size, propelled by social media, mobile cloud computing and social networking. Additionally, there is a proliferation of a variety of multimedia content formats as well as a combination of them such as audio, images, animations, video and interactive content. In such context, intelligent techniques and tools to meet the demanding requirements of scalability, efficiency, security and privacy, reliability, QoS, etc. are imperative.

The objective of this special issue is to publish latest recent findings and development in the field of Intelligent Multimedia Processing, with an emphasis on fundamental research but also on tools for practical applications in the field.

The special issue includes five high quality papers, selected based on their novelty, soundness as well as their usefulness in practical applications. The papers of the special issue are arranged as follows.

In first paper *"Fall Behavior Recognition based on Deep Learning and Image Processing"*, Xu *et al.* present a fall behavior detection method based on depth learning and image processing. Deepcut neural network model is used to detect the key points of the elder human body, when the high frequency images are taken by the camera and are put into processing. The experiments showed that the proposed method can effectively detect falls in indoor environment.

Tong *et al.* in the second paper *"Residual Reconstruction Algorithm Based on Half-pixel Multi-hypothesis Prediction for Distributed Compressive Video Sensing"*, the authors propose a residual reconstruction algorithm based on half-pixel interpolation for Distributed Compressive Video Sensing (DCVS). Performance analysis and simulation experiments showed that the side information generated by the proposed algorithm is refined as well as the reconstruction quality is increased 0.3~2dB in PSNR, when compared with prior works on distributed compressive video sensing.

The third paper *"Deep Reinforcement Learning for Mobile Video Offloading in Heterogeneous Cellular Networks"* by Zhao *et al*. addresses the mobile offloading problem, namely, how to design the optimal strategy in mobile video loads and reduce cell arrangement cost in mobile video communication networks. The authors propose a distributive optimal method by means of multiple agent reinforcement learning in the downlink heterogeneous cellular networks. Simulation results showed that the proposed approach is more efficient to improve the performance than Q-learning method.

Fang and Jin in the fourth paper *"Image-based 3D reconstruction on distributed hash network"* deal with the optimization of the workflow of iterative 3D reconstruction to achieve massive image data processing at high performance and high scalability. An image distributed computing framework based on distributed hash algorithm is presented. The experimental analysis showed that the algorithm

achieved satisfactory results in efficiency and error adjustment. In the experiment of large amount of data, the advantage of the proposed algorithm is observed.

Finally, in the fifth paper *"Reversible Data Hiding for Encrypted Image Based on Interpolation Error Expansion"* by Di *et al.* is proposed and evaluated a reversible data hiding algorithm for encrypted image based on based on interpolation error expansion. The experimental study verified the feasibility and effectiveness of the proposed method, and a better embedding performance can be obtained, compared with some existing methods.

As we finalise this special issue, we would like to thank the authors for their contributions and the reviewers for their constructive feedback. We would like to appreciate the support of Agustinus Waluyo, the Editor-in-Chief of IJMCMC, as well as of the journal team during the edition of this special issue.

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List of papers