

From the Editor

After two and half decades of careful planning and extensive collaboration between US National Aeronautics and Space Administration (NASA), European Space Agency (ESA) and Canadian Space Agency (CSA), the James Webb Space Telescope sent back the first batch of deep space images on July 11, 2022. These images impress the world with their stunning clarity and detailed information captured within. Importantly, they remind us about our shared destiny in this boundless cosmos. For me, these images are as powerful as the last earth image taken by the Voyager 1 spacecraft on February 14, 1990, as she wondered into the space unknown to human. “A Pale Blue Dot”, Professor Carl Sagan’s poetical description reoriented our sense of the world from planet earth to the boundless universe to think bigger and care more. Professor Sagan’s another equally important message was his warning of the climate change at the US Congress in 1985. Unfortunately, efforts in tackling this challenge are at best inconsistent and more often unheeded in the past 30 years to give way to economic development and global competition. The ongoing impact of extreme weather around the world remains as one of the largest challenges for humanity in this century, and the only forward is through international cooperation and technological innovation. However, the old way of passive reaction after disasters no longer serves our needs, as painstakingly scouring through clues from the deep space is often infeasible and futile. Instead, we need to count on the power of machine intelligence to screen pictures of the universe, proactively monitor the environment, and precisely predict looming disasters throughout the world with minimal human intervention.

Our journal continues to collaborate with two international conference committees, IMETI 2021 and ISAIMS 2021, to publish each respective special section in the current issue. IMETI2021 special section consists of five articles, and they are “Study on the Rapid Archival Technology of Bullets based on Graph Convolutional Neural Network” by Shi-bo Pan, Di-lin Pan, Nan Pan, Xiao Ye, and Miaohan Zhang, “Efficient Recognition of Facial Expression with Lightweight Octave Convolutional Neural Network” by Shou-Chuan Lai, Ching-Yi Chen, Jian-Hong Li, and Fu-Chien Chiu, “A Dual-Channel Artificial Neural Network Decision Fusion Framework Incorporated with Deep Learning of Inertial Measurement Unit Sensor-based Spectrum Images for Hand Gesture Intention Cognition” by Ing-Jr Ding, Ya-Cheng Juang, and Bing-Tsan Lin, “Semi-supervised Learning for YOLOv4 Object Detection in License Plate Recognition System” by Cheng-Lung Chang, Pi-Jhong Chen, and Ching-Yi Chen, “Military Target Detection in Remote Sensing Imagery based on YOLOv4-Faster” by Bang-Jui Wang, Chih-Bin Hsu,

Jen-Chun Lee, Shang-Jen Chuang, Chung-Hsien Chen, and Te-Ming Tu.

Twelve ISAIMS2021 Special section articles are included in this issue including “DiM-PCNet:3D Point Clouds Classification with Multi-scale and Multi-level Feature Net” by Kun Zhang, Liting Zhang, Xiaohuai Hua, and Xuan Gao, “Fall Detection Method for Embedded Devices” by Xuepei Ma, Xiaohong Wang, and Kun Zhang, “Ultrasonic Image Optimization based on Double Constraint Algorithm” by Shuai Zhang, Caiyan Pei, Dejie Sun, Jian Wang and Wenyuan Liu, “Segmentation as Domain Knowledge in GAN for Low-dose CT Denoising” by Zhi Yin and Zong Zheng, “An End-to-end Medical Image Segmentation Model based on Multi-scale Feature Extraction” by Tingzhong Wang, Hailong Wang, Nanjie Li, Junhong Xian, Zhongqian Zhao and Deguang Li, “Evaluation of Postoperative Analgesia in Patients with Thoracolumbar Compression Fracture without Nerve Injury by CT using Filtered Back Projection Reconstruction Algorithm” Zhaodi Fan, Jinfen Ji, Min Qian, Guoping Zhang, Jinchao Shen, and Haiyan Sun, “Accurate Power Modelling Framework for Medical Images in Embedded System” by Kai Liu, Junke Li, Jincheng Zhou, and Mingjiang Li, “Medical Mobile Robot Localization in Hospital Corridor Environment using Laser SLAM and Texture Features” by Gengyu Ge, Yi Zhang, Wei Wang, and Qian Wang, “Hierarchical Deep Learning Networks for Classification of Ultrasonic Thyroid Nodules” Bo Wang, Fengqiang Yuan, Zhiwei Lv, Ying He, Zonggren Chen, Jianhua Hu, Jun Yu, Shuzhao Zheng, and Hai Liu, “Natural Feature Recognition of Multi Pose Face Images based of Augmented Reality” by Wenda Xie, Jun Yu, Xiaobo Jiang, and Zongren Chen, “The Effect Analysis of Atlas and Global Signal Regression in Classification based on Brain Network for Major Depression Disorders” Dan Long, Yingjun Liu, Zengsi Chen, Jingsi Xie, Cong Luo, and Lei Shi, “Improved U-Net Fundus Image Segmentation Algorithm Integrating Effective Channel Attention” Junhua Liang, Lihua Ding, Xunming Tong, Zhisheng Zhao, Jie Li, Jungqiang Liang, Beibei Dong, and Yanghong Yuan.

The diverse research topics covered in this issue and their wide applicability represent important testaments to the deep impact of the imaging technology, and I strongly believe that they will inspire fellow researchers to continue this strand of research and build a prosperous future for all.

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