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Recent Advancements in Big Data Technologies and Applications in Computing, IoT and Computer Engineering Technology

J.UCS Special Issue

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Welcome to the special issue on "*Recent Advancements in Big Data Technologies and Applications in Computing, IoT and Computer Engineering Technology*". This issue presents ten high quality academic papers. This mix provides a well-rounded snapshot of current research in the field and provides a springboard for driving future work and discussion. The ten papers presented in this volume are summarized as follows:

1. "*Longitudinal Healthcare Data Management Platform of Healthcare IoT Devices for Personalized Services*": Ahyoung Choi and Hangsik Shin propose a platform that can be utilized for future healthcare service to share accumulated healthcare data in various situations.
2. "*An Experimental System for MQTT/CoAP-based IoT Applications in IPv6 over Bluetooth Low Energy*": Chi-Yi Lin, Kai-Hung Liao and Chia-Hsuan Chang present an IPv6 over BLE experimental system based on Raspberry Pi 3 and Nordic nRF51-DK development boards for MQTT/CoAP-based IoT Applications.
3. "*An Effective Risk Factor Detection and Disease Prediction (RFD-DP) Model Applied to Hypertension*": Dingkun Li, Yaning Li, Zhou Ye, Seon Phil Jeone, Musa Ibrahim and Keun Ho Ryu illustrate a model called Risk Factor Detection and Disease Prediction (RFD-DP) which outperforms traditional feature selection and classification methods in terms of accuracy, F-score, and AUC.

4. "*Target Selection in Head-Mounted Display Virtual Reality Environments*": Difeng Yu, Hai-Ning Liang, Feiyu Lu, Vijayakumar Nanjappan, Konstantinos Papangelis and Wei Wang explore target selection in HMD VR environments which assesses the performance of the main selection metaphors/techniques under conditions that are relevant to the VR environments, including a various index of difficulty (derived from the Fitt's Law), target density, and target occlusion.
5. "*Detection of Potholes Using a Deep Convolutional Neural Network*": Lim Kuoy Suong and Kwon Jangwoo design a deep Convolutional Neural Network (CNN) based on YOLOv2 with a different architecture for the detection of potholes.
6. "*Verifying Secure Authentication Protocol for Communication between IoT-based Medical Devices*": Nipon Theera-Umpon, Kun-Hee Han, Woo-Sik Bae, Sanghyuk Lee and Van Huy Pham develop a protocol which encrypts the communication process and data to eliminate the likelihood of personal information being leaked.
7. "*Machine Learning Optimization of Parameters for Noise Estimation*": Yuyong Jeon, Ilkyeun Ra, Youngjin Park and Sangmin Lee propose a fast and effective machine learning method of parameter optimization for noise estimation of various types of noise.
8. "*Crumbling Walls Log Quorum System based Name Resolution Routing for CCN based IoT*": Pir Imran Shah, Peer Azmat Shah, Sadaf Yasmin, Zahoor-ur-Rehman, Akhlaque Ahmad, Yunyoung Nam and Seungmin Rho present a Content Centric Networking (CCN) based approach in the IoT environment to address scalability problems associated with CCN-assisted IoTs.
9. "*The Generation of Electricity Load Profiles Using K–Means Clustering Algorithm*": Rūta Užupytė, Tomas Babarskis and Tomas Krilavičius introduce an approach which is based on the periodicity analysis and well-known clustering technique – K-means that can be applied for identification for separate users load profiles and clustering of load profiles.
10. "*Modelling of Automotive Engine Dynamics using Diagonal Recurrent Neural Network*": Yujia Zhai, Kejun Qian, Fei Xue and Moncef Tayahi apply a Diagonal Recurrent Neural Network (DRNN) to model SI engine dynamics to achieve a balance between the modelling performance and computational burden, and a moderate cost on computation.

We are beholden to all of the authors for their contributions to the special issue. We would also like to thank the J.UCS editorial team for their support.