Editorial

Houbing Song

Department of Electrical and Computer Engineering
& West Virginia Center of Excellence for Cyber-Physical Systems,
West Virginia University, 25136, USA
Email: Houbing.Song@mail.wvu.edu
Email: h.song@ieee.org

Sana Ullah

Research Centre in Real-Time and Embedded Computing Systems,
Polytechnic Institute of Porto, 4249-015, Portugal
Email: sauah@isep.ipp.pt

and

Department of Computer and Software Technology,
University of Swat, 19130, Pakistan

Hsiao-Hwa Chen

Department of Engineering Science,
National Cheng Kung University, 70101, Taiwan
Email: hshwchen@mail.ncku.edu.tw

Dalei Wu

Department of Computer Science and Engineering,
University of Tennessee at Chattanooga, 37403, USA
Email: dalei-wu@utc.edu

Biographical notes: Houbing Song received his PhD in Electrical Engineering from the University of Virginia, Charlottesville, VA, in 2012. In 2012, he joined the Department of Electrical and Computer Engineering, West Virginia University, Montgomery, WV, where he is currently an Assistant Professor and the Founding Director of both the West Virginia Center of Excellence for Cyber-Physical Systems (WVCECPS) sponsored by the West Virginia Higher Education Policy Commission and the Security and Optimization for Networked Globe Laboratory (SONG Lab). His research interests lie in the areas of cyber-physical systems, internet of things, connected vehicles, wireless communications and networking, optical communications and networking, smart grid communications and networking, and body sensor networks. He is a Senior Member of IEEE and a Member of ACM.

Sana Ullah received his PhD in Information and Communication Engineering from Inha University in 2011. He served as a Guest Editor for many top journals including *Elsevier Journal of Information Science (INS)*, *IEEE Systems Journal (IEEE SJ)*, and *Springer Journal of Telecommunication Systems (TS)*. He also served as a Co-Chair/TPC Member for a number of international conferences including *BodyNets*, *IEEE PIMRC*, *IEEE Healthcom*, *IEEE Globecom*, and *IEEE WCNC*. He is currently associated with CISTER Research Unit at ISEP/IPP as a Research Scientist, and with the Department of Computer and Software Technology, University of Swat as an Assistant Professor.

Hsiao-Hwa Chen is currently a Distinguished Professor in the Department of Engineering Science, National Cheng Kung University, Taiwan. He obtained his BSc and MSc from Zhejiang University, China, and a PhD from the University of Oulu, Finland, in 1982, 1985 and 1991, respectively. He has authored or co-authored over 400 technical papers in major international journals and conferences, six books and more than 10 book chapters in the areas of communications. He is the founding Editor-in-Chief of *Wiley's Security and Communication Networks Journal* (www.interscience.wiley.com/journal/security). Currently, he is also serving as the Editor-in-Chief for IEEE Wireless Communications. He is a Fellow of IEEE, a Fellow of IET, and an elected Member at Large of IEEE ComSoc.

Dalei Wu received his PhD in Computer Engineering from the University of Nebraska-Lincoln, in 2010. He worked as a Postdoctoral Research Associate with the Department of Mechanical Engineering at Massachusetts Institute of Technology from November 2011 to June 2014. Currently, he is an Assistant Professor with the Department of Computer Science and Engineering at the University of Tennessee at Chattanooga. His research interests include networking, cyber-physical systems, intelligent systems, complex system modelling and optimisation. He has published 70 research papers in various prestigious journals, book chapters, and conference proceedings in these areas.

One of the essential functionalities for the smart health is localisation and positioning. Accurate indoor localisation and positioning have the potential to transform patient navigation systems. Over the past few years, a lot of localisation and positioning technologies have been proposed and experimented for various healthcare applications. Most localisation and positioning technologies could be classified into two categories: infrastructure-free, and infrastructure-based. On one hand, infrastructure-free technologies leverage existing WiFi signals and combine them with sensors without the deployment of additional hardware. On the other hand, infrastructure-based technologies require the deployment of additional hardware devices. This special issue invites research papers to promote research activities on localisation and positioning for healthcare applications. Eight papers are selected from a significant number of submissions.

In the first paper, Marron et al. propose a system for pedestrian tracking and activity recognition in indoor environments using exclusively common off-the-shelf sensors embedded in smartphones, which combines the knowledge found in biomechanical patterns of the human body while accomplishing basic activities, along with identifiable signatures that certain indoor locations introduce on sensing data.

In the second paper, Latif et al. propose a distributed victim based distributed denial of service (DDoS) attack detection mechanism based on a very fast decision tree (VFDT) learning model in cloud-assisted wireless body area networks (WBANs).

In the third paper, Gong et al. explores the potential of using channel state information (CSI) for fine-grained passive indoor localisation on a single communication link.

In the fourth paper, Zhang et al. utilise the Topic Maps model to organise consumer health information by linking professional medical terminologies in different languages and the corresponding common vocabularies.

In the fifth paper, Geetha proposes a solution for patient localisation with smart phones using public clouds.

In the sixth paper, Liu et al. propose a novel range-free localisation algorithm based on connectivity (LAC) to exploit the probabilistic regulation in cluster-based deployment.

In the seventh paper, Saeed and Stojkoska propose a robust localisation algorithm for large scale three-dimensional (3D) wireless sensor network based on multidimensional scaling.

In the eighth paper, Van Heute et al. evaluates three different localisation solutions by using multiple metrics in three different test environments to reveal the weaknesses in the existing evaluation methods of indoor localisation solutions in the literature.