
Editorial

Xiuzhen (Susan) Cheng*

Department of Computer Science,
The George Washington University,
Washington, DC 20052, USA
E-mail: cheng@gwu.edu
*Corresponding author

Yingshu Li

Department of Computer Science,
Georgia State University,
Atlanta, GA 30303, USA
E-mail: yli@cs.gsu.edu

Jiang (Leo) Li

Department of Systems and Computer Science,
Howard University,
Washington, DC 20059, USA
E-mail: lij@scs.howard.edu

Biographical notes: Xiuzhen (Susan) Cheng is an Assistant Professor in the Department of Computer Science at the George Washington University. She received her MS and PhD degrees in Computer Science from the University of Minnesota - Twin Cities in 2000 and 2002, respectively. Her current research interests include wireless and mobile computing, sensor networks, wireless security, and approximation algorithm design and analysis. She has served in the editorial boards of technical journals and in the technical programme committees of various professional conferences/workshops. She was the programme Co-Chair of the first *International Conference on Wireless Algorithms Systems, and Applications (WASA06)*. She worked as a programme direction in the National Science Foundation for six months in 2006. She received the NSF CAREER Award in 2004.

Yingshu Li received a BS in Computer Science from Beijing Institute of Technology, China, in 2001, an MS and a PhD in Computer Science from the University of Minnesota at Twin Cities, USA, in 2003 and 2005. She is currently an Assistant Professor in the Department of Computer Science at the Georgia State University, Atlanta, USA. Her research interests include wireless networks and optimisation theory.

Jiang (Leo) Li received a BS (1995) and an MS (1998) in Computer Science from the University of Science and Technology of China, and a PhD (2003) in Computer Science from Rensselaer Polytechnic Institute. He is currently an Assistant Professor in the Department of Systems and Computer Science at Howard University, Washington, DC. His research interests include computer networking, network security and network simulations. He has published in such areas as congestion control, multicast, sensor networks. He is now focusing on delay tolerant networking as well as new multicast paradigms.

The marriage of sensor and network technologies provides many exciting applications of sensor networks. With their capabilities for monitoring and control, networked sensors are expected to be widely deployed. The characteristics of sensors (e.g. the physical dimension) and the application environments of sensor networks pose many requirements that we have not seen in traditional computer networks and therefore demand

much more careful designs. Among the many different angles of exploring this area, we see theoretical study and algorithm development as two of the fundamental ones. While the former unveils many aspects of sensor networks (which may be hidden otherwise), deepens our understanding and sheds light on future directions, the latter is critical for efficient and reliable operations of sensor networks.

With sensor networks being a relatively new area, numerous challenging problems remain unsolved, and thus demands continuous efforts by the research community. In this special issue, we are delighted to compile some of the latest exciting results obtained on theory and algorithms. The problem spectrum is fairly wide, ranging from security modelling, topology control, actuator distribution to data fusion, coverage and medium access

control and more. Techniques used to tackle the problems are colourful. Besides popular graph-theory-based approaches, we can also find the applications of fuzzy logic, genetic algorithms, stochastic approximation, etc. some of which are pretty creative.

Let us applaud the authors' great efforts and keep climbing towards the peak of the ultimate success of sensor networks while standing on these giants' shoulders.