International Journal of Distributed Sensor Networks

Special Issue on

Recent Advances on Body Sensor Networks

CALL FOR PAPERS

Body sensor network (BSN) is a special purpose sensor network located both outside and inside of a human body. BSN is designed to autonomously connect a variety of sensors for satisfying the personalized requirements of certain users, such as healthcare monitoring, environment detection, or application-specific guidance. The devices that a user is equipped with have wirelessly connected sensors embedded inside. The design of the BSN normally needs to satisfy three basic requirements: firstly, a BSN node being an intelligent device must be able to search and find the optimal communication link and then transmit data to the remote server for storage; secondly, a BSN must be flexible for integration and fusion of various data; finally, a BSN must connect itself to the Internet in a noninvasive manner.

Beyond satisfying the above mentioned requirements, there is a wide variety of other challenges in designing BSNs. This includes not only system modeling and communication concerns but also the need to exchange the information among devices without interference. Other important aspects to account for in designing BSNs include human behavior prediction, energy efficiency, and sensors deployment. For example, the appropriate design of ultra-low-power modules and their energy management schemes will substantially extend a BSN's lifetime. The vision is that sensors will be mass-produced with relatively low cost due to the increasing demand of BSNs, especially in healthcare and athletics industries. It is expected that this will bring forth substantial social benefits, such as triggering the expansion of the advanced electronics and service markets and significantly improving people's quality of life. We invite academics and professionals to contribute original research articles as well as review articles on recent advances of BSNs techniques.

Potential topics include, but are not limited to:

- Development trends for BSNs
- Sensory data fusion and mining for BSNs
- Security and privacy for BSNs
- Contextual awareness for BSNs
- Human behaviors sensing and prediction for BSNs
- Wearable computing for BSNs
- Computational intelligence for BSNs
- Energy management or energy harvesting for BSNs
- Communication protocol design for BSNs
- Interference management for BSNs
- Applications, experimental platforms, and prototypes for BSNs
- Radio propagation issues for BSN
- Antenna and other subsystem designs for BSN
- Biomedical signal processing for body sensor networks
- Low power IC design for body sensor networks
- Affective computing combined with BSNs

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