International Journal of Distributed Sensor Networks

Special Issue on

Intelligent Algorithms in Wireless Sensor Networks

CALL FOR PAPERS

During the past years, wireless sensor networks (WSNs) have received intensive research attention in all levels, from hardware fabrication, protocol design, distributed signal processing, sensor fusion, and pattern recognition to more recent focus on big data regression, aggregation, and classification. However, it is demanding to consider unique features of WSNs such as ubiquitousness, distribution, and energy limitation, in the design cycle of intelligent algorithms, which enables WSNs to react and adapt to variation of the environments. The design of specific intelligent algorithm for WSN applications or adaption of existing ones has long been a hot topic with applications across all levels in WSNs. The distributed and pervasive property of WSNs, in contrast to the centralized nature of conventional system, and the essence of location based network of WSNs, in contrast to the location free property of conventional network, together with many other uniqueness of WSNs, make it crucial to leverage advanced intelligent algorithms to deal with data in WSNs for satisfactory performance.

We aim to solicit articles reporting recent research findings in tackling problems on WSNs that employ intelligent data processing and analysis from either theoretical or practical perspectives. Original contributions related to WSN specific intelligent algorithms that provide novel theories, frameworks, and solutions to challenging problems in WSN localization and tracking, energy efficient routing, signal processing, and data analysis will be solicited for this special issue.

Potential topics include, but are not limited to:

- Intelligent sensor theory and applications, machine learning applications to sensor networks
- Distributed signal processing and data fusion for collaborative information
- Applications of distributed estimation and control, game theory, and optimization in WSNs
- Task allocation, reprogramming, and reconfiguration
- Analytic simulation approaches for distributed sensor performance and energy characterization
- Reliable algorithms for energy management in a harsh environment
- Intelligent algorithms, such as neural networks, collaborative filtering, manifold learning, and fuzzy logic, for wireless sensor networks, particle filters, genetic algorithms, particle swarm optimization, etc.
- Design of intelligent software environment (including modular OS, virtual machine, reconfiguration features, etc.) for active sensor networks
- Outlier detection, attack and defense strategy, and information security in networked environments

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/ijdsn/iawsn/.

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