

Special Issue

Energy-Efficient Algorithms for Large-Scale Wireless Sensor Networks

Message from the Guest Editors

Wireless sensor networks (WSNs) pose numerous practical and theoretical challenges that remain partially unexplored. Traditional techniques often fall short in addressing these issues efficiently and effectively due to several inherent limitations, including constrained energy and computational resources, unpredictable sensor failures, channel impairments, node mobility, untrusted or hostile deployment environments, and susceptibility to external attacks. These vulnerabilities make WSNs significantly more fragile compared to other wireless and wired networks. Designing energy-efficient algorithms and developing robust theoretical frameworks for large-scale WSNs remains a major challenge, particularly when aiming to minimize energy consumption without compromising performance. Therefore, the main objective of this Special Issue is to foster a deeper understanding of innovative algorithms and theoretical advancements that support the development and optimization of large-scale WSNs.

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Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

Editor-in-Chief

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