

Special Issue

Toward Net-Zero Networks: Energy-Aware Protocols and Systems for the Future Internet

Message from the Guest Editors

This Special Issue focuses on the emerging vision of net-zero network infrastructures and protocols engineered to minimize energy consumption while maintaining performance, scalability, and resilience. We invite cutting-edge research on energy-aware networking across all layers of the protocol stack, emphasizing practical solutions that align with global sustainability goals. Topics of interest include low-power protocols, cross-layer energy optimization, energy-harvesting and battery-less communication systems, and software-defined approaches to dynamic power management. We also welcome contributions exploring the intersection of machine learning and energy-efficient networking, lightweight security for constrained devices, and sustainable network deployment in edge, cloud, and IoT environments. Through this Special Issue, we will bring together a collection of visionary and practical works that advance the state of energy-efficient networking, paving the way toward greener, smarter, and more responsible Internet infrastructure.

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About the Journal

Message from the Editor-in-Chief

Network provides full coverage of all topics of interest involved in the networking area. The purpose of this journal is to bring together researchers, engineers, and students from academia and industry to present novel ideas and solid research about the theoretical and practical aspects in the application domains of communications and networks. The primary focus of the journal is on the analysis, modeling, design, simulation, and implementation of networks. This journal will also serve to attract research concerning applying networking architectures and scenarios to emerging research topics such as Internet of Things (IoT), edge computing, distributed ledger technology, among others.

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