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In recent years, the wide application of inexpensive hardware, such as complementary metal-oxide-semiconductor (CMOS) cameras and tiny microphones, has contributed to the development of wireless multimedia sensor networks (WMSNs). Now WMSNs are widely used in infrastructure monitoring, traffic monitoring, military, intelligent household, and other new emerging applications. Most often, the types of information collected by WMSNs are video and audio streams, still images, and scalar sensor data. Similar to wireless sensor networks (WSNs), the sensor devices in WMSNs are also strictly constrained in terms of memory, processing capability, storage capability, and, especially, energy. How to use the limited resources to achieve expected results from the original multimedia data is becoming a challenging work with many potential research opportunities.

This special issue is aimed at providing high-quality research to deal with the problems related to data processing techniques in wireless multimedia sensor networks. Research articles are solicited in all aspects including theoretical studies, algorithms, practical applications, open issues, and challenges.

Potential topics include, but are not limited to:

- Conceptual frameworks and architectures for data processing in WMSNs
- Energy management and optimization related to multimedia data processing
- Collaborative extraction, modeling, data, and decision fusion in WMSNs
- Multimedia compression and decompression
- Multimedia data aggregation
- Multimedia data redundancy elimination and optimization
- Multimedia data storage and transmission
- Video and image processing techniques for WMSNs
- Coding and encoding algorithms for multimedia data
- In-network multimedia data processing techniques
- Hardware-based implementations for multimedia data
- Data processing and fusion for large-scale distributed WMSNs
- Intelligent training and learning systems for multimedia data processing
- Security and privacy related to multimedia data processing
- Multimedia data processing techniques for practical applications
- New trends, techniques, and theories that emerged in data processing for WMSNs

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