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ACM Transactions on Sensor Networks
Special Issue on ARTIFICIAL INTELLIGENCE FOR UNDERWATER SENSOR NETWORKS

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The design and development of underwater sensor networks have led to new innovations in the information processing unit, integrated sensor systems, and communication protocols. The advances in underwater and submarine sensor networks make the conventional sensor system more affordable, higher computing capacity, and less battery-powered. However, modern marine data collection and data fusion technologies are required for marine monitoring platform. These unique characteristics pose numerous challenges for underwater sensor network design, including network architecture and protocol modeling. Hence, the scope of Artificial intelligence (AI) systems is utilized for underwater sensor networks to ensure effective data retrieval and handling in underwater sensor networks. Data sensed with AI assistance through different devices are examined and use decision-making process in several areas such as coastal environmental protection, defense, fishing & aquaculture industries, and consumer markets.

Further, Machine Learning is a new discipline in the computer science field developed from the pattern recognition of the cognitive systems, and theory of computational learning in artificial intelligence. It examines the construction of algorithms that can learn based on the forecast complicated scenarios. This includes the Internet of Underwater Things (IoUT) as a network of physical systems that allows underwater data collection with enhanced communication.

This special issue aims to collect recent developments in the estimation, tracking, observation, and regulation of underwater sensors using artificial intelligence systems. Many characteristics have to be taken into consideration because of the complexity of the environment: the need for a large number of connections, limited node strength, radio communications at short distances, extensive propagation latency, low bandwidth capability, and high error rate with the help of sensing technologies need artificial intelligence assistance.

The potential topics include, but are not limited to:

- AI for underwater sensor networks
- Intelligent Search and Optimization approaches in Underwater systems
- Intelligent, cooperative networks
- Intelligent wireless sensor networks
- Data mining in heterogeneous networks for underwater communication
- Underwater sensing technology, including sensing algorithms, sensor design, data fusion, data mining
- Data Interpretation, Intelligent Sensing, and Interpretation of Data in an underwater system
- Hardware design, including system integration, sensor systems, prototype, networking platform, and software-defined communication
- Underwater ranging, localization, and monitoring
- Network architecture design for underwater sensor network
• Network coverage and node placement in underwater sensor networks
• Modeling, simulation, and design for an underwater sensor network
• IoUT for underwater systems
• Routing protocols for underwater sensor networks
• IoUT system optimization and deployment techniques
• Underwater communication and networking technologies
• Sensor networks for aquaculture, fish farming, and fish monitoring
• Underwater sensor network deployments

Submission Information

Important Dates
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