Abstract

Wireless sensor network (WSN) is one of emerging trends in networking technologies being used for communication purpose in modern life. It has mainly comprised of small sensor nodes (SNs) with limited resources. Individual SNs are connected with each other and make the communication possible. Enhancement in the communication among sensor nodes or Sensor-to-Sink nodes is today’s most prominent objective. In this paper we have surveyed artificial neural network for different QOS parameters of WSN. Artificial neural network (ANN) is very prominent emerging area for WSN applications. Generally, artificial neural networks are classified in supervised learning and unsupervised learning. Unsupervised learning includes algorithms like Hebbian, Winner-take-all, ART, ART1, ART2, counter propagation network etc., while supervised learning includes perceptron model, delta learning rule, error back-propagation etc. ANN helps to achieve the better quality of services for communication in wireless sensor networks at the greater extent. We have summarized the survey of neural networks’ techniques applied for WSN applications so far.
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- Danco Davcev and Stojanco Gancev (2009), "Monitoring of environment by..."


Quality of Services Provisioning in Wireless Sensor Networks using Artificial Neural Network: A Survey


- Runjie LIU, Kai SUN and Jinyuan SHEN (2010), &apos;BP localization algorithm based on virtual nodes in wireless sensor network&apos;, published in Wireless Communications networking and Mobile Computing (WiCOM), 6th International Conference on Sept. 2010,
Conference Location: Chengdu, pp. 1 – 4.
- Mohit Mittal and Krishan Kumar, Network lifetime enhancement of homogeneous
sensor network using ART1 neural network", Sixth IEEE International conference on
computational Intelligence and Communication Networks, 2014, pp. 472-475.
- Krishan Kumar, "Self-Organizing Map (SOM) Neural Networks for Air Space
  Sectorsing", Sixth IEEE International Conference on Computational Intelligence and
  Communication Networks (CICN), 2014, pp. 1096-1100.
- M. Mittal and K. Kumar, "Energy Efficient Homogeneous Wireless Sensor
  Network Using Self-Organizing Map (SOM) Neural Networks", African Journal of
- Dr. Krishan Kumar, "ART1 neural networks for air space sectoring", International
- K. Kumar, R. Singh, Z. Khan, A. Indian, "Air Traffic Runway Allocation Problem
  Using ARTMAP (ART1)", Ubiquitous Computing and Communication Journal (UBICC),

Index Terms

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Keywords

Wireless sensor network; artificial neural network; unsupervised learning; supervised
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services.