

Recognition Optimization of Vital Signs by Considering the Maximum of Probability in the Mass Function and the Dempster–Shafer theory in the Body Wireless Sensor System

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Abstract

Body sensor network is a special-purpose wireless sensor network which measures the biological parameters of an individual using wireless sensor nodes in their body and monitors their health from long distance. One of the problems of these sensors is the possibility of failure and their inaccuracy. One of the problems in wireless sensor networks is the potential for sensor failure. In this research, we intend to use the Dempster–Shafer algorithm in sensor-sensor networks on the body to enhance the quality and increase the response resistance against potential error for each of the sensors. There are many articles in the field of combining sensor information that seeks to improve all diagnostic articles. Considering that sensors on the body are a group of sensitive sensors that play a vital role in recognizing human vital signs, improving the efficiency of

sensors in diagnosing vital signs is the most important goal of this study. On the other hand, sensors have electronic components with high sensitivity to noise, and there is the possibility of sensor failure. The proposed method can better detect when there is inconsistent information between sensors. The methods of data integration combine the data from different sensors to more accurately predict the properties and states of a system. This dissertation uses the Dempster–Shafer method in order to combine the information to increase the measuring accuracy and also a comparison to this method and fuzzy method is given.

Keywords :

Wireless Sensor Network, Recognition of Vital Signs, Maximum of Probability in Mass Function, Dempster–Shafer's Theory.