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Intellectual Property

Status:

Patent Pending

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GeM-REM: Generative Model-driven Resource-Efficient Monitoring in Body Sensor Networks

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Background

Body Sensor Networks and wireless medical monitoring have been introduced to help address rising healthcare needs. Medical monitoring is a convenient way to manage various disease states, while potentially reducing the cost of healthcare overall.

Despite impressive advancement in the technology and use of Body Sensor Networks, there still remain significant issues and problems with such systems. Chief among these problems include the significant power use of wireless monitoring, due to the need to have small devices and the need to transmit large amounts of data.

Invention Description

Researchers at Arizona State University and University of Washington have created a novel method to make wireless medical monitoring and body sensor networks economical and practical. Specifically, the method deals with the significant problem of power use by wireless monitoring. The new process utilizes a generative model to reduce the energy use and the necessary data storage. Thus, wireless medical monitoring becomes a more practical endeavor and economical endeavor, by reducing the amount of data that is transmitted over the network.

This generative-model approach could be easily integrated with multiple forms of monitoring, and it serves as an improvement on existing methods of dealing with the power issue.

Potential Applications

- Cardiac/ECG, Diabetes, Asthma monitoring
- Assisted living monitoring
- Fitness
- Entertainment
- Military/emergency personnel

Benefits and Advantages

- **Reduction in Energy:** Reduced power requirements by a ratio of 42:1
- **Reduction in Data Storage:** Reduced data storage requirements by a ratio of 37:1