Towards Non-parametric Statistical Modeling for Low Power Radios in Body Area Networks: Analysis, Modeling, and Simulation

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ABSTRACT

Advancements in nanotechnology will soon make it possible to fabricate a Body Sensor Network (BSN) with miniature embedded sensors that monitor physiological activities occurring inside of the body and simultaneously probe the outside environment for harmful chemicals, dangerous radiation levels, and a more general score of other hostile events. In order to detect and eventually treat diseases in a body sensor network, the development of a communication system that can continuously communicate medical information from noninvasive and in-vivo biomedical sensors are needed. The continuous evaluation of vital signs can reduce the time to detect illnesses and save lives. This research has a significant intellectual merit in engineering, medicine, and nanoscience. It will initiate collaboration between computer scientists, biomedical engineers, and medical doctors with the aim of using a multidisciplinary approach for the detection and treatment of diseases using a Body Sensor Network (BSN).