

***Abstract: A Comprehensive Study and Deployment of New Techniques for Mobile Healthcare Application***

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**Abstract**

In this paper, we address the critical issues raised in mobile healthcare monitoring and propose new solutions to resolve respective problem. We present self-developed wireless ECG and wireless PPG sensors and its application. We propose optimum filter-set for motion artifact removal in ECG recording. Average heartbeat detection rate has been significantly improved at fast movement. We also suggest a simple and reliable abnormal ECG detection algorithm. The algorithm is proved with a promising accuracy of 92.46% in detecting abnormal ECG pattern. Lastly, we present a real time experiment to demonstrate mobile healthcare monitoring of three vital signals: ECG, ear PPG and fingerPPG.

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