

Improving joint recovery of multi-channel ECG signals in compressed sensing-based telemonitoring systems through multiscale weighting

Anurag Singh and S Dandapat

Indian Institute of Technology Guwahati, India

ABSTRACT

Computational intricacy and force utilization are unmistakable issues in remote telemonitoring applications including physiological signs. Packed detecting (CS) has risen as a promising system to address these difficulties on account of its vitality proficient information decrease strategy. In this work, a CS-based methodology is read for joint pressure/recreation of multichannel electrocardiogram (MECG) signals. Weighted blended standard minimization (WMNM)-based joint inadequate recuperation calculation is proposed, which can effectively recoup the signs from all the channels at the same time by abusing the between channel connections. The proposed calculation depends on a multi-scale weighting approach, which uses multi-scale signal data. Under this technique, loads are planned dependent on the analytic data substance of every wavelet sub-band/scale. Such a weighting approach underscores wavelet sub-groups having high demonstrative significance during joint CS recreation. Coefficients in non-analytic sub-groups are deemphasized all the while, bringing about a sparser arrangement. The proposed technique accomplishes unrivaled remaking quality with a lower number of estimations. Decrease in the necessary number of estimations straightforwardly converts into higher pressure effectiveness, bringing about low vitality utilization in CS-based far off ECG checking frameworks.

anurag.singh@iitg.ernet.in

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