A novel signal diagnosis technique using pseudo complex-valued autoregressive technique

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Abstract

In this paper, a new method of biomedical signal classification using complex- valued pseudo autoregressive (CAR) modeling approach has been proposed. The CAR coefficients were computed from the synaptic weights and coefficients of a split weight and activation function of a feedforward multilayer complex valued neural network. The performance of the proposed technique has been evaluated using PIMA Indian diabetes dataset with different complex-valued data normalization techniques and four different values of learning rate. An accuracy value of 81.28% has been obtained using this proposed technique.

Keywords: Autoregressive model, Complex-valued data (CVD), Complex-valued neural network (CVNN), Diabetes, Parametric models

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