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(57) Abstract :

A multi-headed hybrid ECG/TMT-ECG prediction device (200) comprising: a two-dimensional (2D) filtered ECG image data 201 is a pre-processed single-lead ECG signal images of one-second duration; a one-dimensional (1D) timeline data 202 obtained from corresponding pre-processed noise-free ECG/TMT-ECG signal image; a one dimensional flattened images 207 obtained from corresponding pre-processed noise-free ECG/TMT-ECG signal image; a two-dimensional (2D) convolution neural network (CNN) unit (conv2D) 203 is used as a feature extractor to extract features from the input ECG signal images of the pre-processing a ECG/TMT-ECG signal image extraction device; a one-dimensional (1D) convolution neural network (CNN) unit (conv1D) 204 is used as a feature extractor to extract features from the one-dimensional (1D) timeline data 202; a fully connected layers unit (205 and 208) to extract the features of flattened images (1D) further connected to the flattened and concatenated outputs of the convolutional units (203, 204 & 207) to classify signals; a output unit 206 has a single filter to analyze whether the image is a coronary artery disease image labeled as 'one' or 'CAD' and the normal ones labeled as 'zero' or 'NOCAD', wherein the multi-headed hybrid ECG/TMT-ECG prediction device for coronary artery disease that process a hybrid ECG data type concurrently, including a ECG image data (2D), flattened images (1D) and a timeline data (1D). << FIG. 2 >>

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