

SCHOOL OF ENGINEERING

ECG SIGNAL DENOISING USING WAVELET

FINAL YEAR PROJECT REPORT

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Abstracts

ECG signal usually contaminate noise and wavelet de-noising is use to solve this problem. Apart from that, the main purpose is to investigate the type of wavelet, the best threshold method and also best level of decomposition for denoising an ECG signal. After obtaining the ECG signal from the device that had build, the ECG signal is analyze and studied. The wavelet, level of decomposition and threshold are studied as well. The method of de-noising is then investigated. The signal's noise is first to be identify. Next, a wavelet that had similar shape of the noise waveform is chosen. Next, de-noising is performed in the Matlab wavelet toolbox. Result and discussion is recorded in the report. Observe from the result, the wavelet that is most similar to the noise by finding the most suitable threshold and the level of decomposition, have the best result on de-noising of the ECG signal. As a conclusion of this experiment, the most suitable wavelet to de-noise an ECG signal is the Bior 1.5 wavelet at level of decomposition of 3 or 4, depending on the ECG signal, and by using the Rigorous SURE threshold method.