

SMARTPHONE APPLICATION FOR BIOMEDICAL SIGNAL PROCESSING

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Abstract: This thesis presents our development of an EEG signal processing application in Android smartphone. This application can remove EOG and EMG artifacts in acquired data to support on Neurophysiology researching, especially for diagnosis and treatment of epilepsy. It would be very convenient for the doctor to see the EEG signal of his patients whenever and wherever. Although it is just a prototype using stored EEG data on application, we propose a mobile application development that may offset the disadvantages and add more features to it so as to provide a better application. In addition, we also propose a method for eliminating the EOG and EMG artifacts in EEG records by using SOBI algorithm and FFT for calculating the energy of EEG signals in frequency domain. The method has been evaluated and verified in term of signal to noise ratio value.

Keywords: SOBI- Second-Order Blind Identification, EEG – Electroencephalogram, Android Application.