

Source position from EEG signal with artificial neural network

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Abstrak

Electroencephalography (EEG) is recording of the electrical signals on the scalp. These signals come from sources of activity within the brain; however it can be difficult to determine where the sources originate from just by looking at the signals. Through signal processing, these EEG signals can be analyzed and displayed as more useful information. This research explored the evolution of EEG (Brain-waves) topography. The aim of this research was to extract the origins of brain-waves within the brain from EEG data and develop an algorithm to analyze and display this information. This was done in the MATLAB environment by creating: a working software to display and pre-process multichannel EEG data; software/algorithms that could localize sources of EEG within the brain; and a clinician-friendly GUI block. Neural networks are a supervised machine learning technique that can be used to train a system based on previously seen data. Using this approach, it is possible to accurately extract signal positions within the brain.