Using Parallel Simulated Annealing for Functional MRI Analysis

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ABSTRACT

This research will apply an parallel simulated annealing (PSA) to locate the activation area of the fMRIs. Performance evaluation for the location of the activation area will include receiver operating characteristic (ROC) analysis and comparison with t-test, cross-correlation, and linear model. The golden standard images will be generated by computer simulation. Functional magnetic resonance image (fMRI) has been proven to be a unique non-invasive functional imaging tool for studying brain function associated with various sensory, motor, and cognitive tasks. It can also be used to avoid the important neural area by a brain tumor surgery that may cause some side effects.

Keywords : Functional magnetic resonance imaging ; parallel simulated annealing ; receiver operating characteristic

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