Abstract

fMRI is an advanced non-invasive technique used by neurologists to measure and study the brain region activations while performing a particular task. The objective of this paper is to observe the activation patterns in healthy controls and schizophrenics while performing working memory task. In order to study this the authors have used data from fBIRN and the working memory task is SIRP(The Sternberg Item Recognition Paradigm). The research flow proposed by the authors is to preprocess the fMRI data and then estimate parameters using GLM(General Linear Models) as observed from design matrix. Finally it concludes by generating activation maps for both healthy controls and schizophrenics along with extracting activated regions for both. The paper is organized in six sections. Section I and II introduces fMRI and schizophrenia. Section III briefly discusses the data acquisition methods, parameters, SIRP task and tools used. Section IV illustrates the entire preprocessing steps. In section V, a brief discussion on parameter estimation is carried out. Section VI concludes the findings made by the authors from generated SPM(Statistical Parametric Mapping) maps.
Detecting Activation Patterns for Working Memory Task: A Study


Index Terms

Computer Science
Pattern Recognition
Keywords
fMRI  Schizophrenia  Working Memory  SIRP  Activation map  GLM