Abstract

Knowledge-based system (KBS) has been widely used in the detection and interpretation of EEG based neuropsychiatric diseases. Heuristic-based detection methods of EEG (Electroencephalography) parameters for a particular disease have been reported in the literature but little effort has been made by researchers to combine rule-based reasoning (RBR) and probabilistic method i.e Bayesian method. A combined method improves the computational and reasoning efficiency of the problem-solving strategy. We have hierarchically structured the neuropsychiatric diseases in terms of their physio-pyscho (physical, cognitive and psychological) parameters and EEG and FMRI (Functional magnetic resonance imaging) based parameters. RBR model use to create Bayesian network for each disease. The diseases considered are ADHD, Dementia, Mood Disorder, OCD and SI. The basic objective of this work is to develop an intelligent method of RBR and Bayesian model in which RBR is used to hierarchical correlate sign and symptom of the disease and also compute probabilities of diseases. Bayesian method is used for diagnosing the neuropsychiatric diseases and to find the probability of relative importance of sign and symptoms of diseases to other diseases.
References


Index Terms

Computer Science
Artificial Intelligence

Keywords
Neuropsychiatry
Bayesian Network
Probabilistic Model
Prior Probability
Intelligent Computing