# Real time fMRI / Neurofeedback

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**ABSTRACT**

Current diagnostic procedures for neuropsychiatric disorders rely heavily on behavioral criteria. As a result, the diagnosis of these disorders can be influenced by several factors that can strongly affect diagnostic reliability including patient's psychological state, clinician training and experience, and inadequacy in disease nomenclature, among others. For the treatment to be effective, the correct identification of the disorder is crucial. Thus, it is imperative that patient assessments be based on more objective measures. Recent advances in brain imaging technology have enabled researchers to noninvasively identify changes occurring in the brains of patients with various neurological and psychiatric disorders. As such, several studies have investigated the feasibility of utilizing these changes as potential neuroimaging-based biomarkers of these disorders using machine learning algorithms, such as support vector machines, enabling the classification of patients from healthy controls. This talk will introduce techniques using magnetic resonance imaging to identify changes in brain structure and its functional organization in various brain disorders as well as present applications of machine learning algorithms in classifying patients from healthy controls based on these changes.