BACKGROUND

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1 Introduction

While deep learning for brain disorder diagnosis has become pretty advanced over the past few years, many studies have only focused on the diagnosis of one disorder. There are countless studies showing how effective deep learning is to detect Alzheimer's, or Schizophrenia, or Brain Tumors, but not any that try to detect all three. In this project, participants will use deep learning to classify 3-4 Brain Disorders, such as Alzheimer's and Schizophrenia, using MRI brain scans, and then create a working probability model to combine and analyze the results.

2 Scope and Goals of the Project

The goal of the project is to use deep learning in order to better understand / diagnose brain disorders in real world situations. Our scope here is to cover 3-4 brain disorders and 1-2 tasks, then combine the resulting outputs into a singular statistical model for interpretation.

3 Differentiation

Most studies in the past have focused on a number of tasks including segmentation, classification, and localization. But usually limited to one disorder as well as one task. In this project we hope to do multiple disorders and multiple tasks, as well as work on a general statistical model to show a potential direction for future research in combining these individual models.