***Brain Tumor Detection and Segmentation from MRI Images*.**

ABSTRACT

Brain Tumor is a fatal disease which cannot be confidently detected without MRI. In the project, it is tried to detect whether patient's brain has tumor or not from MRI image using MATLAB simulation.

To pave the way for morphological operation on MRI image, the image was first filtered using **Anisotropic Diffusion Filter** to reduce contrast between consecutive pixels. After that the image was resized and utilizing a threshold value image was converted to a black and white image manually. This primary filter the plausible locations for tumor presence.

On this semi processed image morphological operations have been applied and information on solidity and areas of the plausible locations was obtained. A minimum value of both of this characters has been determined from statistical average of different MRI images containing tumor. Then it was used to deliver final detection result.

Though this simulation routine can give correct result most of the time, it fails to perform when tumor's size is too small or tumor is hollow.

The larger goal of the project is to build a data base of 2D image data of tumor from the MRI images taken from different angle of a particular human and by analyzing them to point out the exact 3D location of the tumor . To fulfill this, 2D tumor detection and segmentation have been developed to better accuracy so that 3D detection can be more reliable. This is the primary target of the project.