

## ABSTRACT

Abnormal development of cells in human body leads to the formation of cancer or tumor. The uncontrolled augmentation of cells in human brain leads to the configuration of tumors in brain. These brain tumors are classified into benign and malignant. Similarly, the cells in tumor region are categorized into active or inactive cells. The benign tumors are the tumors which have inactive tumor cells and the area of these abnormal regions are structured. These tumors are also known as homogeneous tumors and they can be cured by proper medication. Alternatively, malignant tumors are tumors which have active cells and the area of these abnormal cells are unstructured. These tumors are also known as heterogeneous tumors and they cannot be cured by medication. Hence, surgery is required for removing these tumors in brain image. The malignant tumors in brain image are classified as glioma, Meningioma and astrocytomas.

This Research work presents a tumors are formed in brain due to the uncontrolled development of cells. These tumors can be cured if it is timely detected and by proper medication. This research work proposes a computer aided automatic detection and diagnosis of Meningioma brain tumors in brain images using Adaptive Neuro Fuzzy Inference System (ANFIS) classifier. The proposed system consists of feature extraction, classification, and segmentation and diagnosis sections. In this research work Grey level Co-occurrence Matrix (GLCM) and Grid features are extracted from the brain image and these features are classified using ANFIS classifier into normal or abnormal. Then, morphological operations are used to segment the abnormal regions in brain image. Based on the location of these abnormal regions in brain tissues, the segmented tumor regions are diagnosed.

The second phase of the work has been developed to Abnormal growth of cells in brain leads to the formation of tumors in brain. The earlier detection of the tumors in brain will save the life of the patients. Hence, this