

Medical Image, Analysis and Visualization using Image Processing

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Abstract: *This project presents an automated approach for detecting brain tumor using Magnetic Resonance Imaging (MRI) and image processing techniques. Traditional methods rely on human inspection, which can be error-prone and time consuming. Our framework consists of several modules: acquiring MRI images, preprocessing to enhance image quality (including noise reduction and edge detection), and segmenting the tumor using the Watershed algorithm. We extract texture features from the segmented images using the Gray Level Co-occurrence Matrix (GLCM), focusing on metrics like energy, contrast, correlation, and homogeneity. Finally, we classify the MRI images as normal or abnormal using a Multilayer Perceptron (MLP) model. This automated detection process improves the efficiency of tumor identification, providing insights into the size, shape, and position of the tumor while alleviating the workload of radiologists.*

Keywords: Medical, imaging, image processing technique, AI Image Processing, Machine Learning, Bill Image Recognition, Predictive Analytics, Inventory Replenishment