**IEEE title:**

**Interactive Medical Image Segmentation Using Deep Learning with Image-Specific Fine Tuning**

**Abstract:**

DEEP learning with convolution neural networks (CNNs) has achieved state-of-the-art performance for automated medical image segmentation. However, automatic segmentation methods have not demonstrated sufficiently accurate and robust results for clinical use due to the inherent challenges of medical images, such as poor image quality, different imaging and segmentation protocols and variations among patients. Interactive segmentation often requires image specific learning to deal with large context variations among different images but current CNNs are not adaptive to different test images, as parameters of the model are learned from training images and then fixed in the testing stage without image specific adaptation. The Proposed system focus on interactive tumor segmentation of medical image sequences using deep neural network. The proposed work utilizes pattern based classification using neural network function. Adaptive Hirerical motion segmentation is designed in the proposed area.

**Existing System:**

Interactive segmentation often requires image specific learning to deal with large context variations among different images but current CNNs are not adaptive to different test images, as parameters of the model are learned from training images and then fixed in the testing stage without image specific adaptation. They proposed a bounding-box-based segmentation pipeline that extracts the foreground from a given region of interest with good compactness to avoid over-fitting.

**Proposed System:**

The Proposed system focus on interactive tumor segmentation of medical image sequences using deep neural network. The proposed work utilizes pattern based classification using neural network function. Adaptive Hirerical motion segmentation is designed in the proposed area. The term adaptive means that the threshold required for segmenting adjust itself according to the segmented area and position.

**Problem Statement:**

* To reduce user interaction by improving the segmentation performance automated.
* To improve the accuracy rate by applying deep neural networks.

**Module Description:**

**Module I: Preprocessing:**

This module consists of Matlab executable commands useful for extracting the image frames from the input database video. RGB panel is used to view the red, green and blue components of the image separately. It has already been mentioned that an RGB image is overlap of three two dimensional matrix. The discrete cosine transform (DCT) is closely related to the discrete Fourier transform.

**Module II: Segmentation:**

The median filter is used in order to remove the noise from the merged RGB panel. The image features like color, weight, and depth and pixel information to apply before the classifier (Deep neural network). Here we used the adaptive hierarchical motion segmentation algorithm is used in order to segment the portion of defected areas.

**Module III: Neural Network:**

This module is used to establish the deep neural network concept for training the image and testing the image with the help of weight estimating classifier. the result image will compared with the dataset images and it will display whether it is normal or abnormal. Finally it shows what type of the tumor.

Start

Video to



DCT

Normalization

Red Panel

Green Panel

Blue Panel

DCT

DCT

Normalization

Normalization

Median Filter

IDWT

IDWT

IDWT

Texture Extraction

Adaptive Hirerical Motion Segmentation

Merge

Get Test

Video

MRI/ USD

Compare with Dataset

Configure Deep Neural network Function

Calculate Tumor Type

**To Interactive User Display window**

**Block diagram:**

**System Requirements:**

**SOFTWARE REQUIREMENTS**:

MATLAB R2013a

**HARDWARE REQUIREMENTS:**

PC, Pentium 4 processor, 1 GB RAM, CPU 3.06 GHz