Eye Tumour Detection And Segmentation of Eye Parameters

S.Meenakshi Sundari[1], R.Yazhini[2], M.Shalini[3]

Abstract- In this paper an image analysis system for the eye tumour detection will be designed. In this system, different image processing methods are used to extract the tumour and mark it on the original image. The images are first smoothed using median filtering. The background of the image is subtracted, to be then added to the original, results in a brighter area of interest or tumor area.The experimental results show that the suggested system based on image fusion, is capable of detecting tumour in the eye.The proposed research consists of Eye Tumour Detection System. Results will be compared accordingly in search for eye cancer.

Keywords- Artificial neural networks, image fusion, eye tumour detection, canny operators

I. INTRODUCTION

Retinoblastoma is an exceptional form of cancer that rapidly develops from the immature cells of retina.it almost present in the young children. The very regular and noticeable indication of retinoblastoma is an anomalous appearance of the retina as viewed through the pupil, the medical phrase for which is leukocoria also known as amaurotic cats eye reflex. The occurrence of the photographic fault red eye in only one eye and not in the other may be a symptom of retinoblastoma.it falls under two categories:

1. a genetic ,inheritable form and
2. A non-genetic ,non-inheritable form.

The symptoms of eye tumor will be;

1. a white color in the center circle of the eye when light is shone in the eye ,such as when taking a photograph.
2. Eye that appears to be in different directions.
3. Eye redness.
4. Eye swelling.

Although there are causes tumors seems to develop in both eyes .The quantity and dimension of tumor may differ.The location and amount of tumour are considered when selecting the type of the treatment for the disease.Image processing techniques are used in various medical fields.

II. PROPOSED SYSTEM

This section image channel enhancement is used to detect the tumor. Since the tumors present in eye is normally looks like a normal eye.The tumor eye and normal eye almost similar in color and feature.in the proposed system color channel enhancement is applied because of that numerous values are being read up and the algorithm segment the process in a unique way.so that the minute cancer also being detected.

III. MODULES

1. **PREPROCESSING**
2. **FEATURE EXTRACTION**
3. **CHANNEL ENHANCEMENT**

FLOW DIAGRAM
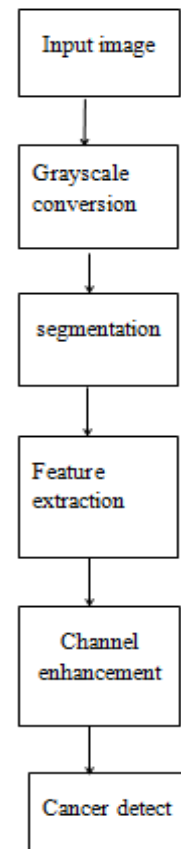
INPUT IMAGES:

Input images are color images that are converted into gray scale images using gray scale conversion. Input images are taken from the database.Five images are present in the database.

PREPROCESSING:

The segmentation was carried out by converting the image to a binary image using threshold in the range. The threshold is empirically chosen by blinding subject status and observing which value gives better segmentation of the high activity regions.Followed by segmentation boundaries of these regions were detected using canny edge detection method which is provably more accurate.

GRAY SCALE CONVERSION:

Gray scale images ranges from 0 to 255.The conversion of a color image into a gray scale image is converting the RGB values(24 bit) into gray scale value(8bit).The original image has been converted to gray scale in order to minimize the CPU time.

A representation of additive color mixing. Projection of primary color lights on a screen shows secondary colors where two overlap; the combination of all three of red, green, and blue in appropriate intensities makes white.The name of the model comes from the initials of the three additive primary colors, red, green, and blue.

Here is an example of color channel splitting of a full RGB color image. The column at left shows the isolated color channels in natural colors, while at right there are their gray scale equivalences:The reverse is also possible: to build a full color image from their separate gray scale channels.

SEGMENTATION

Image segmentation is the process of dividing an image into multiple parts. This is typically used to identify objects relevant information in digital images. There are many different ways to perform image segmentation. Watershed segmentation process is used in the eye tumor detection.watershed segmentation process is used in the segmentation process.

IMAGE FILTERING:

Image filtering can be done by using median filter. Filtering is mainly used to reduce the noise.smoothing and blurring can be done by using filter. Median filter mainly used as a linear filter.

IMAGE RESIZING:

Image re sizing used to minimize or maximize the image size. It is used to give the perfect view of the image. This image processing technique intends to improve the quality and brightness of the image by expanding the intensity of its pixels.

FEATURE EXTARCTION:

In this section features like shape based features striatal binding ratio,radial features all features are extracted.

IMAGECHANNEL ENHANCEMENT:

In this module the image data are being compared and stored in a temporary arrays.The enhanced values are used to compare the feature extracted images.end of this module detects the minute tumor present in the eye.
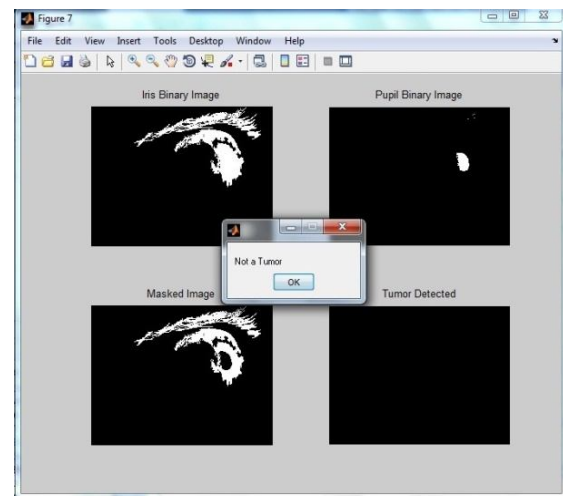
IV. RESULT

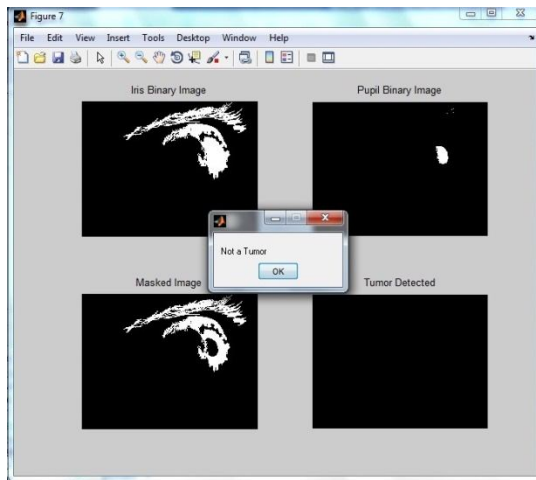figure 1.1 tumor is not present
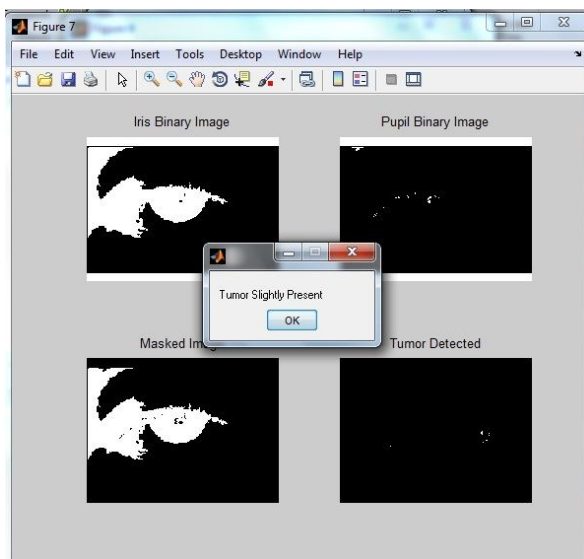
figure 1.2 not a tumor

Figure1.3tumor slightly present

figure 1.1 shows that if pcount value is lesser than 10 - it display a output screen,not a tumor.

figure 1.2 shows that if pcount value is greater than 400 - it display a output screen ,tumor is present.

figure 1.3 shows that if pcount value is greater than 10 and lesser than 100 - it display a output screen, tumor is slightly present.

V. CONCLUSION

In this paper image processing approach are used for the detection of eye tumor.In this approach input images are taken then converted into gray scale images then segmented, features are extracted,then the image be enchanced using image channel enhancement method. Atlast cancer will be detected.The experimental results obtained when testing the

proposed system proved that the developed eye tumour detection system is a robust image processing system that is capable of detecting any abnormalities in the iris region of the eye in particularly the tumours and small patches. Future work will be the suggested system to recognize the skin tumour

REFERENCES

[1] 1.Dimililer K.Neutral network implementation for X X-rays. electronics world 2012:118(1911):26-29.

[2] Milesresearch.http://w.w.w.milesresearch.com/main/links /html.

[3] Zhang Y-J Image engineering.Image processing.2nd edn.Tsinghua university pree:2006.