

Analysis and Detection of Ovarian Cyst Using Soft Computing Technique in MATLAB

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Abstract

Cyst and polycystic ovary syndrome is a disorder is a normal phenomenon that affect woman in the perlite age. The most important thing is that PCOS. PCOS syndrome is mainly found in women aging from 12 year to 60 year. In our project, we will be going to use more neighbour counter, water shade method, active counter models, Gaussian filtering and binary filtering method are going to be used in this paper to detect the size, shape and border of the ovarian cyst from echography images. In order to analyse the efficiency of segmentation and application developed in MATLAB software is proposed.

Keywords: Classification, follicles, MATLAB, ovary, segmentation

INTRODUCTION

An ovarian cyst is a sac or a pouch filled with fluid or other tissue that forms in an ovary [1]. Ovarian cyst are very common and they occur during the childbearing or after menopause [menstrual cycle]. Most ovarian cyst is beginning [not cancer] and go away on their own without treatment [2-4].

TYPE OF CYST

Functional Cyst

This is the most common type of ovarian cyst. It usually causes more Symptoms [5]. Functional cyst often go away without treatment within 6 to 8 weeks [6].

Teratoma Cyst

This is a type of cyst, contains different type of tissue that makes up the body such as skin and hair [7]. This cyst may be present from birth but can grow during a

woman's reproductive years, In very rare cause, some teratomas can become cancer [8].

Cystadenoma Cyst

This cyst forms on the outer surface of the ovary, these cyst are non-cancerous [9].

Symptoms:

- White discharge.
- Many cyst are found during a routine pelvic exam or imaging taste done for certain regions [10].
- Some cyst may cause a dull or Sharpe age in the abdomen and pain during certain activities cyst that burst that also may cause severe pain [11].
- The ovarian cyst also called as functional cyst. They are classified into follicular cyst, corpus Luteum cyst, Haemorrhagic cyst, dermoid cyst.

METHODOLOGY

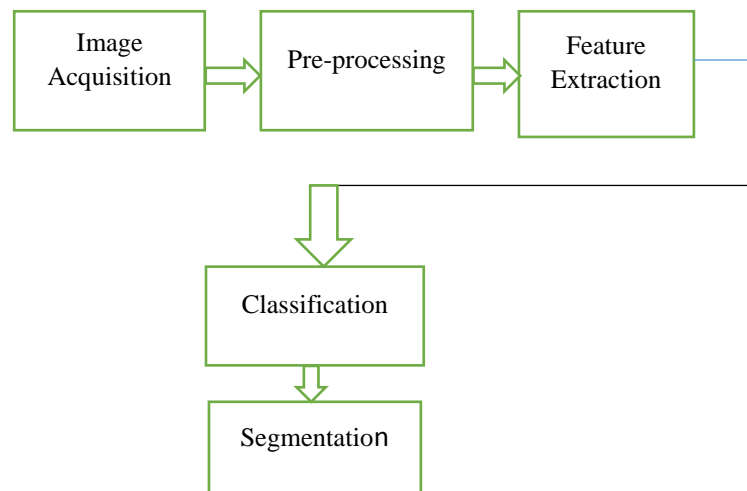


Figure 1: Method Flowchart

WORKING

Whenever any pregnant lady has a cyst problem, the doctor examine the report of the cyst patient and distinguish it between cancerous and non-cancerous cell [12-14]. But in our work, we will be capturing the cyst images of the patient and software develop using MATLAB would analyse the image [15].

Initial pre-processing involves noise remove by various filtering of the image followed by contrast enhancement using linear classifier [16].

The proposed system will be very helpful

& also served as good teaching and research tool for student [17].

The proposed system, is built, utilized and optimized to use various computational resources, power and faster algorithm [18].

The proposed work is distinguished between training phase and testing phase. In the training phase certain set of ovarian cyst image are given and trend [19]. Then pre-processing process occurs proceeded by feature extraction and will be saved & stored in feature data base [20].

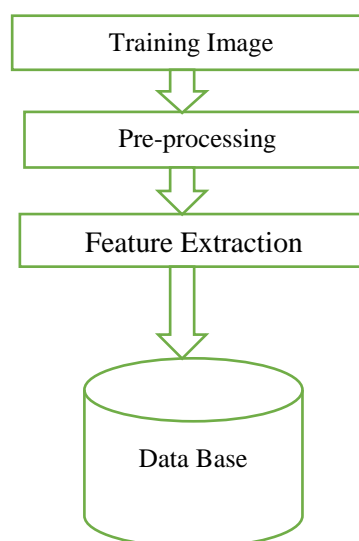


Figure 2: Flowchart depicting Training Phase

In testing phase certain sets of ovarian phase images are given & tasted to find out the type of cyst [21].

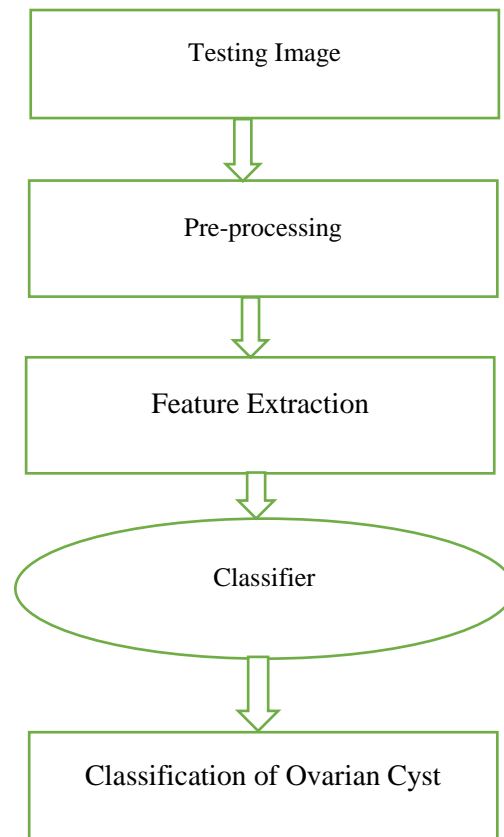


Figure 3: Flowchart depicting testing phase

The pre-processing means the original image were received in JPEG digitized format that means each image was pre-processed in 3 steps [22].

1. We used non local means filter to denoised the image & reduced the impact of speckle noise [23].
2. A negative transformation of each denoised image is prepared.
3. We produced the enhance copy of each image by obtaining the absolute difference between the negative image and negative counterpart [24].

SEGMENTATION

Image segmentation refers to separating the ROI (region of interference) from the background of the whole image.

Automatic segmentation of ROI has the same grace colour as that of background. By using segmentation we can find the

exact size of the cyst.

CONCLUSION

The proposed research is to find different kind of cyst image, size, and dimension by using linear classifier. The research work begin with the collection of Image from a hospitals acquired through highly resolute digital camera.

A database of 20 images will be taken & linear classification will be done to determine its feature.

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