Abstract

The ovarian ultrasound imaging is an effective tool in infertility treatment. Monitoring the follicles is especially important in human reproduction. Periodic measurements of the size and shape of follicles over several days are the primary means of evaluation by physicians. Today monitoring the follicles is done by non-automatic means with human interaction. This work can be very demanding and inaccurate and, in most of the cases, means only an additional burden for medical experts. In this paper, a new algorithm for automatic detection of follicles in ultrasound images of ovaries is proposed. It has typical object recognition scheme
Automatic Detection of Follicles in Ultrasound Images of Ovaries using Edge Based Method

(preprocessing, segmentation, feature extraction and classification). The proposed algorithm uses edge based method for segmentation. The preprocessing employs gaussian low pass filter or contourlet transform for despeckling the ultrasound images of ovaries. The classification is based on $4\sigma$ intervals around the mean feature (geometric) values. The experimentation has been done using sample ultrasound images of ovaries and the results are compared with the inferences drawn by medical expert. The experimental results demonstrate the efficiency of the method.

Reference

- P.S.Hiremath and Prema Akkasaliger, Despeckling medical ultrasound images using the
contourlet transform, 4th AMS Indian International Conference on Artificial Intelligence (IICAI-09), 16-18, Dec.2009, Tumkur, India.

Index Terms

Computer Science                  Pattern Recognition

Key words

Ultrasound Image

Ovarian follicle segmentation

Edge based method

Gaussian low pass filter

Contourlet transform