48. FOLLICLE DETECTION IN ULTRASOUND IMAGES OF OVARY

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A normal ovary consists of 8-10 follicles from 2mm to 28mm in size. Monitoring the follicles is very important in human imitation. Periodic measurements of the size and shape of follicles for several days are the primary means of evaluation. An automated diagnostic system is used to detect such follicles in the ovary. The effective and automated method for detecting the follicles using ovary ultrasound images and the classification of those follicles is presented. To improve the performance of follicle detection in ultrasound images of ovaries, a new algorithm is developed using fuzzy logic. The proposed method consists of four major stages; (i) image preprocessing; (ii)ultrasound image segmentation; (iii) feature extraction and (iv) Fuzzy classification Inference System (FIS) and it employs contourlet transform for despeckling the ultrasound images of ovaries, active contours without edge detection for segmentation and fuzzy system for classification. The follicles are characterized by seven geometric features which are used as inputs to the fuzzy logic block of the Fuzzy Inference System. The result of the fuzzy logic block is a follicle class or non follicle class.

Keywords— Contourlet transform, Active contour without edges, Feature extraction, Fuzzy Logic.

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