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(57) Abstract :

The invention pertains to an advanced image processing system designed for the accurate detection, diagnosis, and classification of ovarian conditions. Leveraging the power of Convolution Neural Networks (CNN), the system delves deep into ultrasound ovary images, extracting intricate pixel details. It further employs a unique segmentation technique using watershed algorithms and Otsu's thresholding to isolate follicles. The introduced SCBOD algorithm, coupled with augmentation techniques, aids in extracting both geometrical and statistical features of follicles. With a robust classification mechanism using the SVM classifier, the system can effectively categorize ovaries into normal, cystic, and PCOS types. The integration of preprocessing techniques ensures image clarity, paving the way for enhanced diagnostic accuracy. This comprehensive approach to PCOS detection and diagnosis heralds a new era in medical imaging and diagnostics.

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