

White Blood Cell Nucleus Segmentation Based on Adaptive Threshold Detector

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Abstract. WBC (white blood cell) differential count can provide valuable information for accurate disease diagnosis. WBC segmentation and location detection are the most crucial steps for digital hematological images analysis. The main difficulties of the automated system are not only the varieties of their colors but also the varieties of their shapes. This paper proposes an adaptive WBC nucleus segmentation approach. The proposed method includes two steps. The first step is to enhance the WBC nuclei by combining two different color spaces in a blood smear image. Then the thresholding based adaptive segmentation method is proposed. The experimental result shows that we can obtain promised segmental results even apply on different color tone and size of smear images.

Keywords: Leukocyte segmentation, WBC segmentation, Genetic algorithm

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