Enhanced Segmentation Method for Bone Structure and Diaphysis Extraction from X-ray Images

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Abstract

Medical imaging systems have been used in various medical application domains like trauma centre, orthopedic, pain management and vascular and non-vascular. One of the oldest and frequently used devices to capture human bones is X-Ray. During the process of identifying fractures, a vital step is the extraction of bone structure from the x-ray image. In this paper, a model that combines multi-resolution wavelets, region growing algorithm and active contour model is proposed to segment the bone structure from the x-ray image. Further a fast Hough transformation is used to extract the diaphysis region from the segmented bone structure. Experimental results prove that the proposed algorithm is efficient both in the manner of segmentation and speed of segmentation.

References

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