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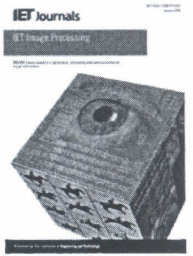
Published in IET Image Processing
Received on 5th February 2014
Revised on 15th July 2014
Accepted on 31st July 2014
doi: 10.1049/iet-ipr.2014.0106



ISSN 1751-9659

Active contours with prior corner detection to extract discontinuous boundaries of anatomical structures in X-ray images

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Abstract: Active contours are a form of curves that deforms according to an energy minimising function and are widely used in computer vision and image processing applications to extract features of interests from raw images acquired using an image capturing device. One of the major limitations in active contours is its inability to converge accurately when the object of interest exhibits sharp corners. In this study, a new technique of active contour model to extract boundaries of objects having sharp corners is presented. By incorporating a priori knowledge of significant corners of the object into the deforming contour, the proposed active contour is able to deform towards the boundaries of the object without surpassing the corners. The ability of the new technique to accurately extract features of interest of anatomical structures in medical X-ray images having sharp corners is demonstrated.