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## Abstract

Damage of nerves occurs when an external force traumatically injures the nerves which cause a host of physical, cognitive and behavioral effects can range from complete recovery or permanent disability or death. The delineation of the trauma in brain, abdomen and lungs is a challenging task due to variations in shapes and image quality. In this method we present a semi automatic method for extracting the damage of nerves in brain, abdomen and lung from cardiac CT images, in which all the nerves are located sequentially. Each nerve is detected by first identifying the injuries and then segmenting the damaged part. To this end, the damaged nerve is localized by utilizing its geometric features obtained on-line from a CT image. After

that, a variational region-growing model is employed to extract the damages. In particular, the location of the nerves damage is determined using via active contour model on the surface of the nerves. This extracts the damage of the nervous system and determines the exact accuracy of the damage is demonstrated by experimental results.

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Computer Science

### Index Terms

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### Keywords

Medical Image Diagnostics Computer Tomography Active Contours Level sets  
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