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Author: E. Martínez-Sandoval Miguel E. Martínez-Rosas Humberto Cervantes de Ávila Manuel Moisés Miranda Velasco M.R. González-Márquez

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# Method to extract an enhanced cervical vertebrae area from a digital X-Ray image

E. Martínez-Sandoval, Miguel E. Martínez-Rosas*, Humberto Cervantes de Ávila, Manuel Moisés Miranda Velasco, M.R. González-Márquez

*Universidad Autónoma de Baja California, Ensenada, México*

## Abstract

Combination of Digital X-Ray with image processing techniques has the potential to extract useful information for healthcare professionals (physicians). From all the information that can be extracted from X-Ray images, information concerning the human cervical vertebrae is relevant for the medical area. Therefore, in this work we present a simple enhanced Region of Interest (ROI) selection tool to select automatically the region that contains most of the information concerning to cervical vertebrae. The ROI-selection method reduces the size of a lateral or frontal digital X-Ray by 30% to 60% without losing significance in the resulting image. This is achieved by an adjustment of dimensions in the image while the cervical area is preserved. Moreover, the visual quality is improved by performing a contrast enhancement in the region of interest.

- Automatic threshold selection is computationally more efficient than traditional image segmentation techniques.
- Reduce size in comparison with original image (enhancing ROI).
- Independence of depth gray scale space.

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