An approach to edge detection for osteopathic medicine

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We want to study the dynamics of the vertebras. Two radiographs obtained from a patient in two different positions are considered.

Both radiographs are the source for our work. The information (image) of these radiographs is disturbed by noise coming from the brightness of it.

Our focus works with the concept of deformable models and the active contour model, and the principles of Canny's algorithm.

Like in Figure 1 and after apply some filters, noisy reduction and the Canny's algorithm we have obtained the contour or an approximation of it for some vertebras that were previously selected by the specialist.

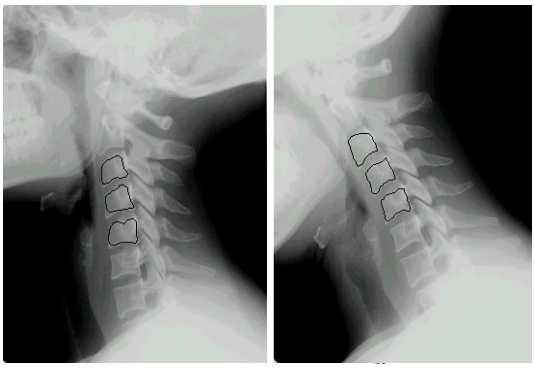

Figure 1. Images with the contour for some vertebras.

Once we have the contour, we can proceed to extract it from each image and we done the analysis of the sum of both contour images. Fig. 2 shows the contour extracted from each image and the sum of them.

Finally an initial report is generated from the system, in which the specialist finds the angle variation between each couple of vertebras (one from each image). Fig. 3 shows the initial table.

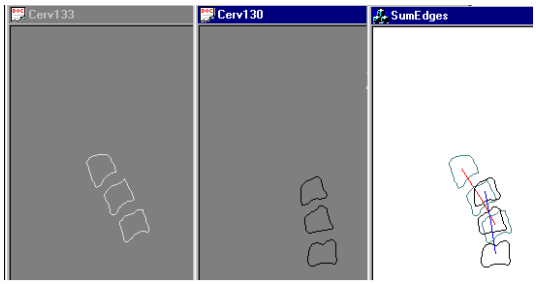

Figure 2. Edges extracted from each image and their sum

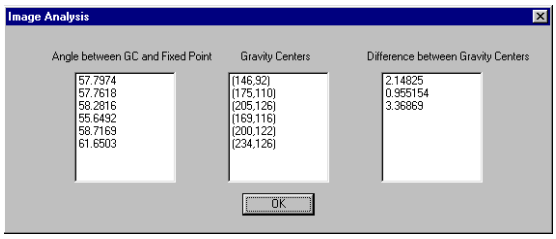

Figure 3 Initial table of image analysis

Currently we develop a new algorithm for edge (contour) detection, in order to better solve the problem arising the excess or lack of brightness into the image.

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