

Article:

**Automatic Segmentation of Anatomical Structures
from CT Scans of Thorax for RTP**

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Aim and Scope

A fully automated method to segment the lungs, trachea/main bronchi, and spinal canal accurately from CT scans of patients with lung cancer to be used for radiation treatment planning purposes is proposed in this study.

Aim and Scope

The proposed method consists of three processes.

First, the body region of the patient in a CT image is segmented by elimination of the background.

Second, rough segmentation of the lung fields, segmentation and elimination of the trachea/main bronchi, the lung fields correction, the right and left lung separation steps, and a post processing step for inclusion of excluded pathological areas into the segmented lungs are realized, respectively.

Aim and Scope

Third, the vertebra and finally the spinal canal are segmented by means of the fuzzy segmentation algorithm.

Within these processes, a new algorithm for inclusion of excluded pathological areas into the segmented lungs, a modified version of the fuzzy segmentation by morphological reconstruction for spinal canal segmentation, and the well-known image processing algorithms were used.