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Titel des Beitrags: Fast multiple organ detection and localization in whole-body MR dixon sequences.

Abstract: Automatic localization of multiple anatomical structures in medical images provides important semantic information with potential benefits to diverse clinical applications. Aiming at organ-specific attenuation correction in PET/MR imaging, we propose an efficient approach for estimating location and size of multiple anatomical structures in MR scans. Our contribution is three-fold: (1) we apply supervised regression techniques to the problem of anatomy detection and localization in whole-body MR, (2) we adapt random ferns to produce multidimensional regression output and compare them with random regression forests, and (3) introduce the use of 3D LBP descriptors in multi-channel MR Dixon sequences. The localization accuracy achieved with both fern- and forest-based approaches is evaluated by direct comparison with state of the art atlas-based registration, on ground-truth data from 33 patients. Our results demonstrate improved anatomy localization accuracy with higher efficiency and robustness.

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