Abstract

This paper presents a novel method Vertebrae Statistics description Algorithm (VESTAL) to label lumber vertebrae and intervertebral discs (IVDs). Each vertebra and IVD has certain statistical features and properties. To label vertebrae and IVDs, a new equation to model the path of spinal cord is derived using statistical properties of the spinal canal. VESTAL uses this equation for labelling Lumber vertebrae and IVDs by determining both posterior, interior width and heights. The calculated values are compared with real values which are measured using scale and the comparison produced 95 % efficiency and accuracy in results. The VESTAL is applied on 50 patients, 250 MR images and obtained 96% accuracy in labelling.
A Novel Method VESTAL to Label Lumber Vertebrae and Intervertebral Discs

- Ayse Betul Oktay and Yusuf Sinan Akgul, 2013. "Simultaneous Localization of Lumbar Vertebrae and Intervertebral Discs With SVM-Based MRF" IEEE Transaction on Biomedical Engineering Vol 60, No 9,
- Mohammed Benjelloun, Sa?d Mahmoudi, and Fabian Lecron, "AFramework of Vertebral Segmentation Using the Active Shape Model-Based Approach" Hindawi Publishing Corporation, International Journal of Biomedical Imaging, Volume 2011, Article ID 621905, 14 pages

**Index Terms**

- Computer Science
- Image Processing

**Keywords**

- Disc
- Labelling
- Intervertebral Disc
- Vertebrae
- Spine
- Statistics
- Texture.