Comparison of Thyroid Segmentation Algorithms in Ultrasound and Scintigraphy Images

Authors:
Jaspreet Kaur
Alka Jindal

Abstract

To integrate medical images and image processing, image segmentation plays an essential role. Image segmentation is an operation that separates the image into different segments. There are several image segmentation algorithms that are at present available. In this paper, three segmentation algorithms have been implemented and discussed namely: Active Contour without edges, Localized region Based active contour and Distance Regularized Level Set. To detect the thyroid disorders various imaging modalities are used: MRI, Scintigraphy, SPECT and Ultrasound. Out of these, Ultrasound Imaging and Scintigraphy have been discussed in this paper. The segmentation algorithms have been implemented on these two modalities to segment the thyroid gland.

References

- Chuan-Yu Chang, Senior Member, IEEE, Yue-Fong Lei, Chin-Hsiao Tseng, and Shyang-Rong Shih, "Thyroid Segmentation and Volume Estimation in Ultrasound Images", IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING, VOL. 57, NO. 6, JUNE 2010.
Comparison of Thyroid Segmentation Algorithms in Ultrasound and Scintigraphy Images

- Dimitris K. Iakovidis • Michalis A. Savelonas, Stavros A. Karkanis and Dimitris E. Maroulis, "a genetically optimized level set approach to segmentation of thyroid ultrasound images," Published online: 16 June 2007 Springer Science+Business Media, LLC 2.

Index Terms

Computer Science  Image Processing

Keywords

Thyroid Gland  Segmentation  Active Contour without edges  Localized region Based active contour and Distance Regularized Level Set