

2D / 3D Medical Image Analysis

Short description:

Design and implementation of algorithms for medical image analysis

Goal:

Over the past years, medical image analysis has become very important in the different treatment stages of somatic diseases. Medical decisions are assisted by computers throughout diagnosis, monitoring, therapy planning, execution and follow-up examinations. The goal of this project is to design and implement interactive segmentation algorithms for medical data, like:

Egger J. "Refinement-Cut: User-Guided Segmentation Algorithm for Translational Science". *Sci. Rep.* 4, 5164, June 2014.

<http://www.nature.com/srep/2014/140604/srep05164/full/srep05164.html>

Schwarzenberg R, Freisleben B, Nimsy C & Egger J. "Cube-Cut: Vertebral Body Segmentation in MRI-Data through Cubic-Shaped Divergences". *PLoS One*, April 2014.

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0093389>

Egger J, Lüddemann T, Schwarzenberg R, Freisleben B & Nimsy C. "Interactive-Cut: Real-Time Feedback Segmentation for Translational Research". *Journal of Computerized Medical Imaging and Graphics*, Elsevier, Available online 11 February 2014.

<http://www.sciencedirect.com/science/article/pii/S0895611114000160>

Note: Biomedical Engineering Students are welcome!

Keywords:

Medical Image Analysis, Segmentation, Computer Vision, Computer Graphics, Deep Learning, Machine Learning

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