

Graph-Cut Library for Biomedical Image Analysis

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<http://cbia.fi.muni.cz/projects/graph-cut-library.html>

Abstract

We have developed an open-source cross-platform library focusing on combinatorial optimization via graph cuts. It can be used in many digital image analysis tasks; especially for finding optimal solutions to energy minimization based discrete labeling problems such as image segmentation (e.g. Chan-Vese or Mumford-Shah segmentation model or geodesic active contour model). The library is being developed in C++ and places emphasis especially on speed and low memory usage as well as clean and extensible object-oriented design. It considers the aspects typical for biomedical image analysis, e.g. anisotropy, n-dimensionality, large images. MATLAB interface for all segmentation algorithms in the library is also available. We will present the library and examples of its usage in fluorescence microscopy image analysis.

Keywords

Graph-cuts, image segmentation, C++ library, energy minimization

