

ITK Wrapper for Fiji

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Abstract

The Insight Segmentation and Registration Toolkit (ITK) is a powerful open-source, cross-platform image analysis toolkit that employs leading-edge algorithms for registering and segmenting multidimensional data. In the past, several open-source applications, such as Paraview and 3D Slicer, based on ITK have been used for analysis and visualization purposes. Fiji is another open-source solution that possibly targets a wider community ranging from image processing and computer vision to bioengineering and neuroscience. In this work, we propose to bridge the gap between these solutions by making the ITK-based functionalities accessible from within the Fiji environment. This is achieved through the use of the Java Native Interface (JNI), which enables ImageJ to load C++ libraries. We tested our approach on the problem of semiautomated neuron tracking by extending the publicly available Simple Neurite Tracer plugin to improve tracing quality.

Keywords

ITK wrapper, ImageJ/Fiji, neuron tracking

