timagetk Documentation

Release 1.

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Contents

Tissue Image Toolkit (*timagetk*) is a Python language package dedicated to image processing of multicellular architectures such as plants or animals, and is intended for biologists, modelers and computer scientists.

The package provides the following main functionalities (both in 2D and 3D):

Tissue Image Toolkit

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Teams:

- Inria-Cirad-Inra Virtual Plants
- Inria Morpheme
- Inria Project Lab Morphogenetics

Stable release: 1.0.0

Written in: C, Python

Operaring system: Linux, Mac OS

Licence: Inria licence, no commercial use

- **Linear filtering:** gaussian, gradient, hessian, laplacian, etc.
- **Grayscale mathematical morphology:** erosion, dilation, opening, closing, hat transform, sequential filters, etc.
- **Segmentation:** h-transform, connected-component labeling, watershed, etc.
- **Registration:** rigid, affine and deformable registration, composition of transformations, sequence registration, multi-view fusion etc.
- **Mathematical morphology and computation of features on labeled images:** erosion, dilation, moments, spatial relationships, etc.
- **Temporal tracking based on graph-theory**
- **Unit tests and examples:** see the ref_examples

Thanks to Python language these functionalities can be combined with many other Python libraries such as for example NumPy and SciPy for scientific computing or matplotlib for curve plotting.

Documentation

This is the ref_documentation for Tissue Image Toolkit version 1.0.0.

To build **timagetk**'s dynamic documentation (sphinx), open a shell prompt and type:

- `sudo pip install -U Sphinx`

Go to the **timagetk/timagetk/doc/** folder and type:

- `make html`

Open the file: **timagetk/timagetk/build/html/index.html**

Installation

There are many different ways to install Tissue Image Toolkit, and the best way depends on how you want to use it and what you already have installed. Order to help you, the ref_installation instructions have been detailed.

Licence

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