

ClamView-handbook

Overview

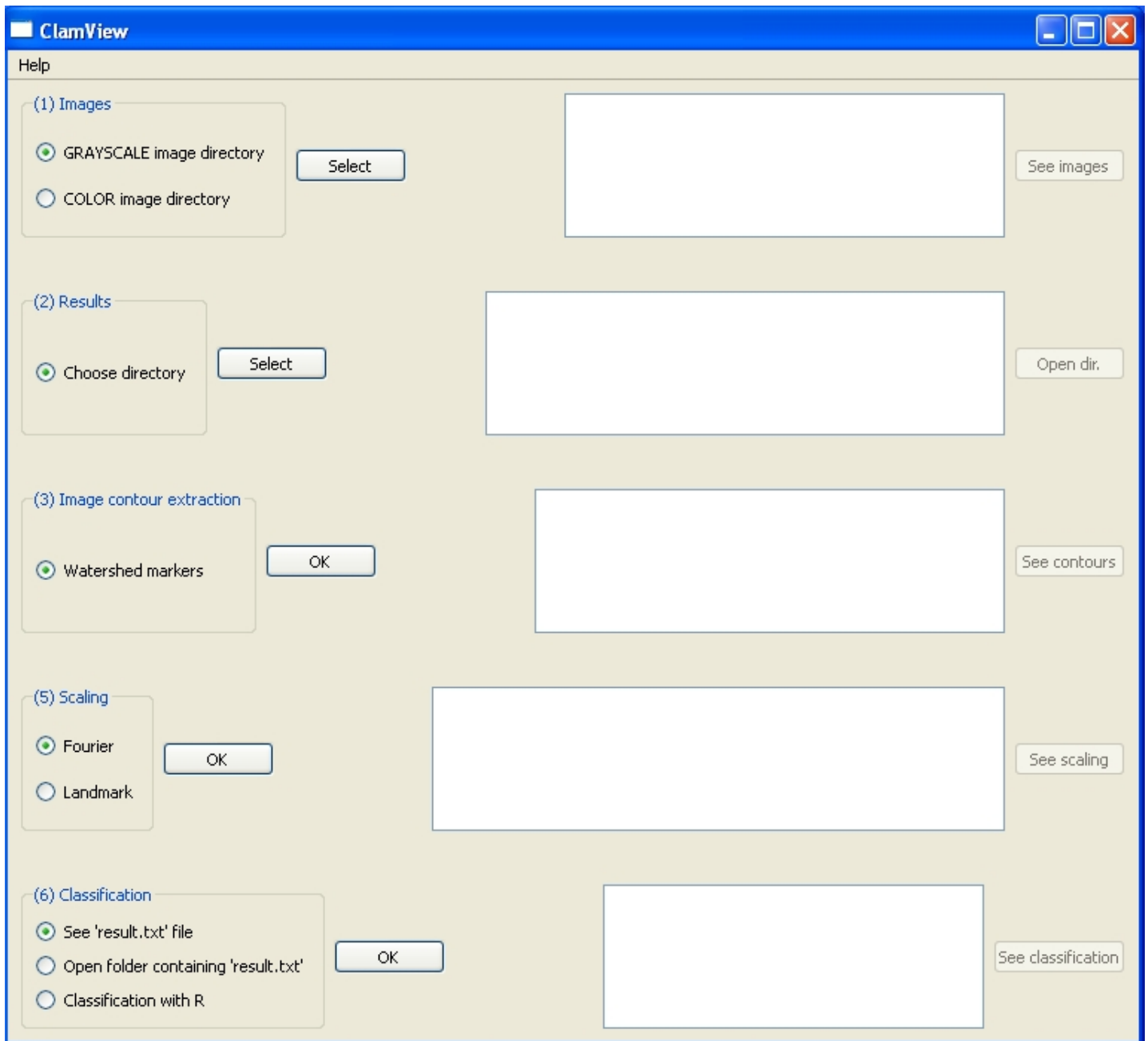


Fig. 1. The ClamView interface.

ClamView is the Graphical User Interface (cf. Fig. 1) of a set of codes implementing image processing on clam images. It provides tools to perform morphometrics analysis on them:

- contour detection of clams;
- scaling with the calculation of Fourier or Landmarks descriptors for the obtained contours;
- statistical classification of clams thanks to the calculated descriptors.

The tools interfaced by ClamView have been developed by Axel Largent in the framework of the [OTIAMA project](#). Details are available in the internship report of Axel Largent, see the following page: <https://redmine.univ-pau.fr/projects/clamview/documents>.

This software has been supported by the following organizations:

- The Pau and Adour Region University, France ([UPPA](#));
- The French National Center for Scientific Research ([CNRS](#));
- The French Research Institute for Exploration of the Sea ([Ifremer](#)).

License

ClamView (Copyright 2012, UPPA and CNRS, France) is a multi-licensed software. All parts of this distribution are at most free softwares, and at least freewares (i.e. available for use at no cost or for an optional fee).

The main files of ClamView are written in Python and are released under the **CeCill-C license**, as well as the source files of 'fourier', 'landmarks' and 'watershed_marqueur' directories (located in the 'src' folder). ClamView's main program calls several external components. Among these components, some of them are part of this distribution and have their specific license terms.

All license files of ClamView's components are provided in this distribution (see the 'license' directory). Please note that a full copy of the CeCill-C license is also available at http://www.cecill.info/licences/Licence_CeCILL-C_V1-en.html.

Getting Started

First, we describe the necessary steps for the [installation](#) of ClamView. Then a [quick start guide](#) for using ClamView is provided.

Installation

This software is suitable for the Windows operating system.

To install ClamView several softwares are needed.

IMPORTANT:

All the referred softwares are available on the ClamView home page, in the "Files" page: <https://redmine.univ-pau.fr/projects/clamview/files>.

We also provide other download links for the different softwares (generally from their own home page).

Please notice that **specific** versions of the needed softwares are required to run ClamView. Using other versions than indicated below could lead to a malfunction of ClamView.

You must have ADMINISTRATIVE RIGHTS on your computer to install the hereafter tools, IN THE FOLLOWING ORDER:

1) Python 2.7 for Windows: **python-2.7.msi**.

When asked, choose "Install for all users", otherwise only the administrator of the computer will be able to use the interface;

then perform a default installation.

Other download link: <http://www.python.org/ftp/python/2.7/python-2.7.msi>.

2) pywin32 for Python 2.7, Windows 32 bit version: **pywin32-215.win32-py2.7.exe**.

The installer will tell you that Python 2.7 is required for this package, and to select the corresponding installation of Python. Choose that Python version and proceed to a default installation (keep the proposals of the installer).

Other download link:

<http://sourceforge.net/projects/pywin32/files/pywin32/Build%20215/pywin32-215.win32-py2.7.exe/download>.

3) PyQt for Python 2.7, Windows 32 bit version: **PyQt-Py2.7-x86-gpl-4.9.5-1.exe**.

Again, performs a default installation:

keep the full installation choice without changing anything;

keep the installation path proposed by the installer.

Other download link:

<http://sourceforge.net/projects/pyqt/files/PyQt4/PyQt-4.9.5/PyQt-Py2.7-x86-gpl-4.9.5-1.exe/download>.

4) MATLAB Compiler Runtime (MCR) R2012b, Windows 32 bit version: **MCR_R2012b_win32_installer.exe**.

Perform a default installation.

Other download link (may not work):

http://www.mathworks.fr/supportfiles/MCR_Runtime/R2012b/MCR_R2012b_win32_installer.exe.

5) ClamView : **ClamView-xxx.zip** (for instance **ClamView-1.0.zip**).

You can finally use ClamView:

unzip the file;

To launch the ClamView interface, you must double-click on the following file: **ClamView-xxx\bin\ClamView.py**.

We advice you to create a shortcut of this file on your desktop:

use **My Computer** or **Windows Explorer** to locate the **ClamView-xxx\bin\ClamView.py** file;

Right-click the object, and then click **Create Shortcut**;

Drag the new shortcut to an open area on the desktop.

Now you can launch ClamView from your desktop by double-clicking on the created shortcut.

Quick start guide

ClamView contains several sections corresponding to a working step. To realize a complete calculation, you must perform them in the following order:

1. **Images**

Allows to choose the directory containing the clam images to process ('*Select*' button).

You must indicate if you are using grayscale or color images.

When the directory is selected, you can see the corresponding images ('*See images*' button).

2. **Results**

Allows to choose the directory that will contain all the results of the processing ('*Select*' button).

When this directory is selected, you can open and browse it ('*Open dir.*' button).

3. **Image contour extraction**

Allows to launch the "watershed" contour extraction, or to use a previously executed extraction ('*OK*' button).

The execution may take some time to start (because it launches the Matlab Runtime Library).

When it starts, you can see a Matlab figure with a clam contour. A cursor appears when you put the mouse on the figure. You must:

- position the cursor with the mouse inside the contour, and left-click;

- position the cursor with the mouse outside the contour, and left-click;

- press the **Return** key to terminate the point acquisition;

- a representation of the extracted contour appears: close it;

Then a new Matlab figure appears with an other clam contour and you must repeat the procedure until there is no more images to process.

The generated contour pictures are available by clicking on the '*See contours*' button.

4. **Scaling**

Allows to launch the "scaling" procedure (Fourier or Landmark based), or to use a previously executed scaling work ('*OK*' button).

The scaling result image (sample contours and the mean contour of all samples) is available by clicking on the '*See scaling*' button.

5. **Classification**

Allows to open and locate the **result.txt** file, containing the Fourier or Landmark descriptors calculated by the scaling procedure. This file can be used to perform statistics classification with the R software for instance.

Contact

Information about this software can be found on the [ClawView home page](#).

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