Documentation for

IFCB\_attribute\_editor.m

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## Overview:

This software is a Matlab function designed to view and tag images collected with custom-built IFCBs in the Laney lab (008 and 015). It provides very general tagging of images with attributes that can be custom-defined by the user. Taxon is one possible attribute, but the software supports multiple attributes per image, and multiple values of an attribute.

The input files are the ‘triplets’ of a normal IFCB (\*.roi, \*.adc, and \*.hdr). The output is a similarly named, human-readable \*.atr file that simply lists key-value pairs (attribute is the key, value is the attribute value).

## Requirements:

This software is written for Matlab 2015b on a Windows platform, and requires the Image Processing Toolbox. No support is provided for other Matlab platforms or versions.

## Download:

This software is available at the following location on GitHub:

<https://github.com/samlaney/IFCB_attribute_editor>

If installing new to a Matlab folder, use the source versioning to download from GitHub

1. If this is an initial install, create a new folder using the Matlab editor (the ‘Current Folder’ panel on the left side of the GUI)
2. Change directory to that folder
3. In the ‘Current Folder’ pane in the Matlab GUI: right click in the whitespace, select “source control 🡪 manage files”.
4. Top pull down menu: select ‘git’
5. Download from: use the URL above
6. Download to (sandbox): should be the folder you created above, and are currently in.

## Initial test & verification of install:

1. From the Matlab prompt, type “attribute\_editor” then <RET>. This will open an empty window.
2. You should see ‘No file selected’ as the title in the main window.
3. Use the ‘File 🡪 Open new ROI file’ to get a ‘Select File to Open’ dialog box. Choose an appropriate ROI file.
4. If the chosen file has neither a corresponding \*.atr file, or folder that contains \*.atr files, a prompt will appear to allow those to be created as needed.
5. The main window will load the images from that ROI file. This may take some time depending on the file size, and a ‘wait’ icon (rotating circle) will appear during that time.
6. When the file is loaded, images will be apparent in the main window and a Options Dialog box will appear on the right. All fields specified in the atr\_config\_default.txt file will be shown.
7. The software version can be seen by selecting ‘Version’ on the menu. Check that it is actually an update compared to any previous versions you may have been using.
8. The Matlab command line window will echo success or failure of different tasks it does or is requested to do. For example, the command line window will periodically report autosave operations. When red or orange text is seen in this window, this represents a basic failure or problem. Known problems that the script can recognize during functioning are reported as errors or warnings.

## Preparing your data:

1. Your data should be somewhere in a folder called ‘data’. If you have matching attribute files already, they should be in a parallel folder called ‘attribs’

## Operation:

(document in progress after this point)

1. From the Matlab prompt, type “attribute\_editor” then <RET>. This will open an empty window.
2. Go to the File menu and Open. Go to the directory you want and select the ROI file you want to work on. It will only show ROI files (and not ADC or HDR files) for simplicity.
3. The window will show the rotating circle as it loads the images. Larger files take longer to load. Once a file is loaded you will see images in the main window, and in the title bar you will be on page 1 of however many pages it takes to display all the images in the file.
4. You will be prompted to create a matching ATR file if one does not already exist.
5. Use PAGEDOWN and PAGEUP to move to later or earlier pages. HOME and END jump to the first and last pages, respectively.
6. A dialog box will also be open (OPTIONS DIALOG) to the right: it contains controls on different display options.
7. An autosave timer will be running to save the atr file every two minutes, as specified in the script
8. To assign attributes:
   1. Right click on an image will select it and bring up the ATTRIBUTES DIALOG. Alternatively, left-clicking on multiple images selects them in sequence, and a subsequent right-click on the final image to select (or one of the previously selected images) brings up the dialog. single image, or left click multiple images to select a set, then right click on the final one. A ‘Select All’ menu option is provided to select all images in a given screen.
   2. In the ATTRIBUTES DIALOG, select the attribute to be assigned to these images. Once done, these attributes will be assigned.

## Options dialog menu:

OPTIONS DIALOG can control how images are displayed. ‘Hide sorted’ can be used to automatically hide all images that are sorted into categories other than ‘unsorted\_large’ and ‘unsorted\_small’. Checkboxes in the right-most pane can be used in combinations to show or hide different sets of sorted and unsorted (in this case) taxa. This dialog box should show all categories in the taxon list in the config file being used.

As of this release (9Dec2015) only the ‘hide sorted’ checkbox is to be used in the entire left column. All other checkboxes on the left are placeholders for future expansion.

## Closing the program:

The program can be closed by closing the OPTIONS DIALOG (upper right red check box) and then the main window. A prompt will appear to ask if the atr file should be saved one final time.