Pixel Labeler 2.0 Instructions

PixelLabeler2.0.exe is a segmentation labeling tool for MIL X Service Pack 5. This tool was developed for internal purposes and is available as-is to the MIL user community.

To launch the tool:

1- Ensure that MIL X Service Pack 5 for Window 10 64-bit is installed on your PC.
2- Create a working directory (new folder), download the executable, and copy it to the new working directory.
3- Create two new folders inside this new directory: “source_directory” and “destination_directory”.
4- Copy the images that need to be labeled to the “source_directory”.
5- Launch the Windows Command Prompt and move to the new working directory, using the following command:

```
cd /d path_to_working_directory
```

6- From the Windows Command Prompt, start PixelLabeler2.0.exe, using the following command:

```
PixelLabeler2.0.exe source_directory destination_directory number_of_classes -ctx ctx_path -th threshold
```

Note the following details in this command:

- The source directory is the directory where the images that need to be labeled are stored.
- The destination directory is the directory where the labels will be stored. This directory can be empty when you first launch the tool. If you want to fine tune or modify the labeling, the labels saved in this directory will be loaded again.
- The number of classes is the number of classes in your dataset, including the background class.
- The context path is an optional parameter that you can specify to load a trained context. This option is typically used when you already have a trained classifier for the images you want to label. This option allows you to use the prediction output of the context as a starting point for the labels to make the labeling process easier.
- The threshold is also an optional parameter; it indicates the threshold score that will be applied to the prediction output of the trained context. Only prediction scores above the threshold will be considered as part of the label. The default threshold value is 90.

7- Once you launch the application, the following keymap will appear:

```
KEYMAP:
============================
Mouse right click            :: Brush the canvas
Brush modes                  :: (1) Circle, (2) Square
Next image                   :: Right arrow (->)
Previous image               :: Left arrow (<-)
Increase class index         :: Up arrow (^)
Decrease class index         :: Down arrow (v)
Save labels and next image   :: Space bar
Eraser                       :: E
Clear the canvas             :: C
Increase brush size          :: F
Decrease brush size          :: D
Change opacity level         :: O
End without saving           :: Esc
```

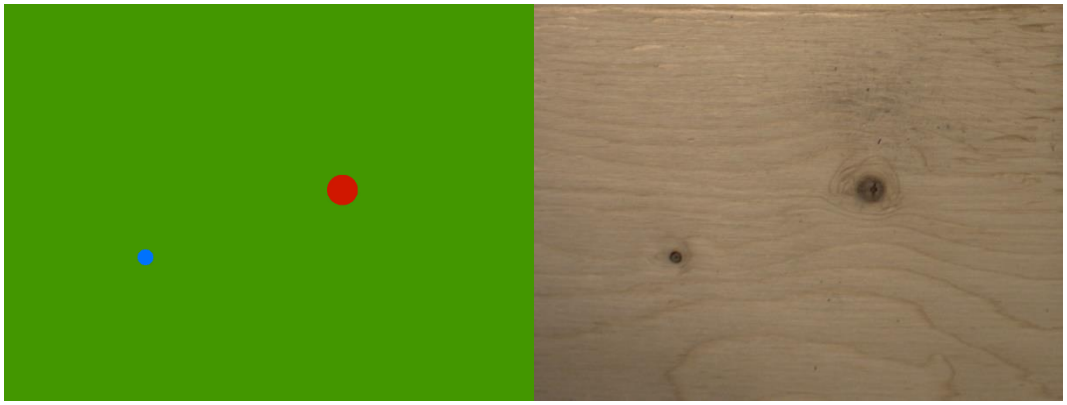
Take a few moments to understand the keymap.

8- Press “Enter” and start labeling.

Additional details

- All the images in the source and destination directory must have the same size.
- The pixels of the label image are initialized to 0, indicating that all the pixels belong to the background class. Set the class index to a value other than 0, and brush over pixels to assign them a different class. Selecting the Eraser automatically sets the class index to 0.
- A lookup table is associated with the labeled images saved. The following is an example of index values that are mapped:

Value	Color
0	Green
1	Red
2	Blue
…etc.	…etc.



- The color green (the background class color) is not displayed during the interactive brushing process to let you better see the image content that you are labeling.
- To ensure the labeling process is behaving as you expect, you should frequently validate that your labels are saved properly by inspecting the destination folder. You should also back up your labels every time you want to relaunch the Pixel Labeler tool.