

Instructions for using the object detection editor.

PURPOSE:

For starters, the purpose of this file.

One of the first steps in the LIRA pipeline, given an image, is to detect the location of Type 1 lesions on the image. We do this by scanning a window across the image, and using that as input to a model (neural network, in this case) for object detection. This model either predicts each window as positive (detected object) or negative (no detected object). If it predicts it as positive, then it saves the coordinates of the window. If it predicts it as negative, then it moves on.

However, our model is not perfect, and as such may make mistakes. So in order to ensure that the entire pipeline is not screwed over by a mistake of our object detector, we present all of these predictions to the user in order to allow them to quickly check and correct its mistakes.

I will refer to these detected objects as rectangles, because that's what they look like - red rectangles.

So, now for how the user can do this!

USING THE EDITOR:

There is no toolbar for this editor, unlike LIRA-Live - this is because there are only 3 commands you need to actually remember, and they're pretty intuitive / easy to remember:

1. Go to the next image - Press the N key. You can not go back without starting the process over again.
2. Add rectangles to an area - Left click, then drag to select the area. Area will be filled with as many rectangles as possible.
3. Remove rectangles from an area - Right click, then drag to select the area. All rectangles entirely within the area will be removed. If a rectangle is only half in the area, then it will not be.

You should only be adding rectangles where you notice the detected object, but as for identifying the detected object you should be familiar with how to do this - in our case, it was for identifying Type 1 lesions.

Once you have gone through all the images, LIRA will automatically move on with the rest of the pipeline. You're done, and it will handle everything until it has predictions across all the slides. Go have a snack, or watch new episodes of Rick and Morty if they're out yet.

Good luck, have fun,

-Blake Edwards / Dark Element