

Reflection on Future Quality Checks:

Hi, I'm Manuel Ortiz.

Completing this project was an incredible experience because it made me think beyond the basics. Reviewing Scale's Dashboard and Traffic Sign Spec Document, I took the time to analyze the possible and most common mistakes we make. The first one was to check that the "non_visible_face" labels are the only ones that should have a "not_applicable" background color. Therefore, if traffic lights had a "not_applicable" background color instead of "others", it could be wrong.

On the other hand, I did something more interesting that could be analyzed: Label overlap. This was not easy at first since there are many traffic signs in the world that are close to each other. To solve this, I separated the "non_visible_face" labels from the others. Because on a pole there may be traffic signs that are not visible because they are facing the opposite direction, and this often leads us to place any of the other labels over "non_visible_face", but all traffic signs that are visible to us cannot be overlapped but must be separated on the same pole. It is very common for us to sometimes place the same label twice on the same traffic sign. I created a function to calculate the position of each label by calculating its perimeter and area. In order to know how much percentage of one label is overlapped of the other. As such, it is not an *error* because there are traffic signs that are farther away and may overlap with the signs that are closer to the camera, but it serves as a "**warning**" to check if it is labeled correctly. About sizes, I used the area of all the labels in a task to calculate the average size of the labels in the image and thus check which label has a higher probability of having an error when it is too large.

On future, these last two implementations will have a great impact to help be more careful in putting more than one same label on the same traffic sign. If have more time, maybe label comparison can be improved by adding more comparison functions and obtaining more probabilities of identifying errors in placing more than one same label on the same traffic sign or the probability of identifying a label that is excessively larger. It was very challenging to complete this project, but I loved being able to perform these simple validations with SCALE.

Thank you.