

Session 20

During this session, I devoted the first part to refining the calculation of the coordinated strategy of the handle which turned out to be more complicated to find than expected. Indeed previously, we used the `max_edges_np` thanks to numpy to find the maximum air, this function proved to be multidimensional and inadequate for the calculation.

We therefore returned to the threshold but which this time will be applied to an image delimited with vertical lines, our main problem is the play between the frame and the door that OpenCv translates as a discontinuity of the image.

That's why before starting the reanalysis on the trace of the lines to define the frame of the door by following a tutorial (fig 1) .

Which consists, at first in defining a `display_lines` function, traversing the image line by lines. Then another that filters the rows by their coordinates.

We first end up with incomplete lines generated by the `HoughLines` as follows:

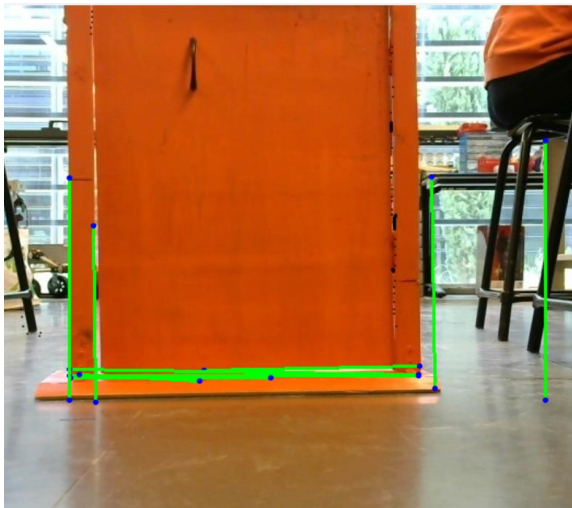


Figure 1 : Result of HoughLines

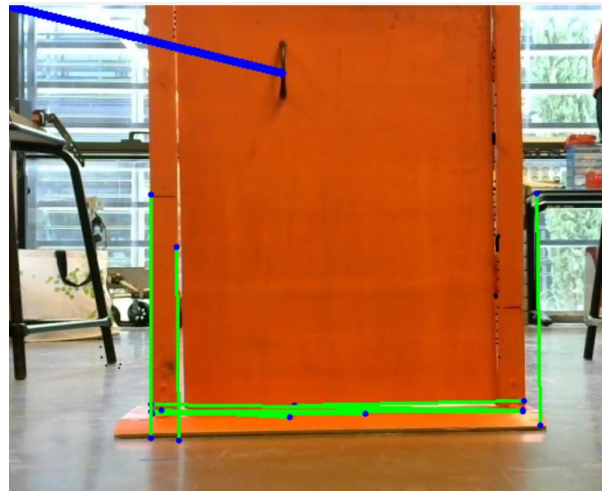


Figure 2 line between the origin and the handle

To draw the rest, we must determine a homographic matrix, I always work on that in parallel.

I found the coordinate manually (fig 2) and for this image precisely, however I stagnate a little to automate it to all types of doors under different angles.

To make sure of the results, I transformed the coordinate into mm and it corresponded well to the real location.

To convert to pixels: multiply by 3.779.

Then, in view of the approaching presentation, I reworked on my arm, first of all I injected the coordinate found to initiate the movement.