VISION: Panorama

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1 Section 1 : Goal

The user click 4 or more corrisponding points in left and right images. After a right botton click the programme computes the homography and shows the resulting panorama in a new window.

2 Section 2 : Commands for compile

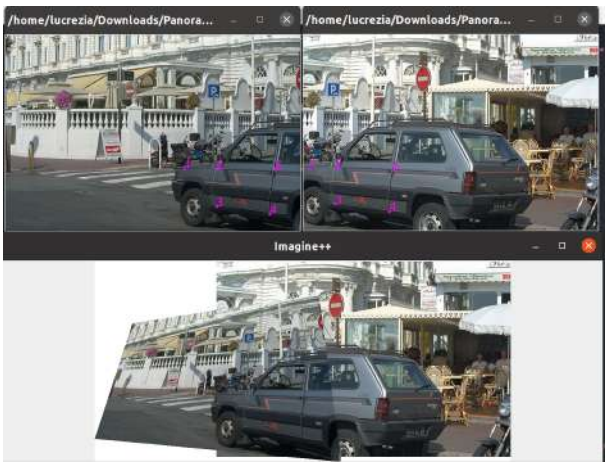
For compile the code in Linux is necessary to enter through the terminal the right folder where cthe code".cpp" and the images and write:

```
cmake .
make
./Panorama
```

3 Section 3 : Results

If the point taken are 5, and are well taken the results are usually good, the two images are unite making a complete view of the car, or in case of different images a complete view of the object.

Figure 1: Example with 5 points taken



Sometimes with 4 points the calculation results in c̈annot solveërror, even when A has an inverse, and thus allows to find a homography-solution, as it's possible to see in figure only the second picture is shown as final result!

Figure 2: Example of a error with 4 points taken

On the other hand other times, when the points don't create parallel lines, the code works and the final result is almost correct.

Figure 3: Example with 4 points taken

If the point are not carefully taken the result is clearly not correct, an expected behavior that is coherent with the code.

Figure 4: Example with 5 points taken, but not precise matching

Even when many points are taken the result are not good, this could be improved, as we saw during the lecture, using the least square error increasing the quality of the outcome image.

Figure 5: Example with many points points taken

Using different images the results are quite good taking 5 points.
The feeling of seeing a panoramic image is present and the two images are merged quite well, although it is clearly visible that this is a combination of two photos as the effect of total continuity has not been achieved!
More specifically, the final image does not have a standard size, but according to the chosen points it has different dimensions (not considering the white part of the image).

Figure 6

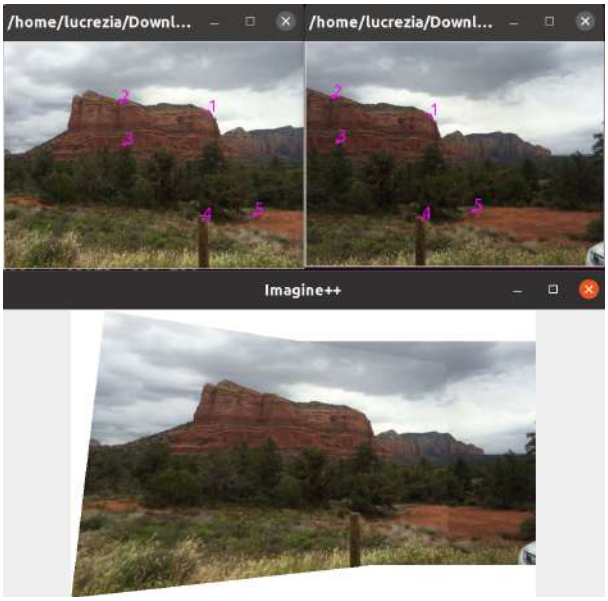


Figure 7