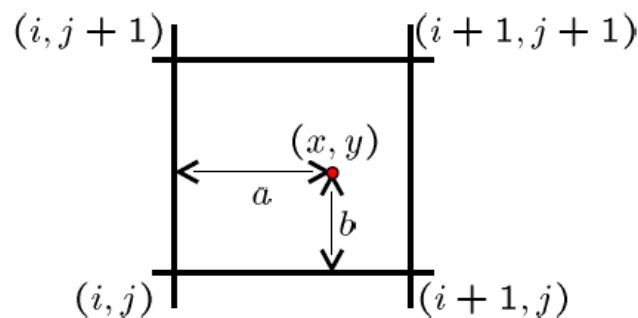


COMPUTER VISION – Lab session n. 1

Image warping and bilinear interpolation

- Given a coordinate transform $(x,y)=h(x',y')$ and a source image $f(x',y')$, compute a transformed image $g(x,y) = f(h(x',y'))$. Example of transformations: translation, rotation, swirl (a rotation that grows linearly with the distance to the center of the image).
- Perform backward warping (from the output image to the input image) with a bilinear interpolation.



$$\begin{aligned} f(x, y) = & (1 - a)(1 - b) f[i, j] \\ & + a(1 - b) f[i + 1, j] \\ & + ab f[i + 1, j + 1] \\ & + (1 - a)b f[i, j + 1] \end{aligned}$$

Color spaces

- Load the image “color.bmp” and visualize it in RGB space.
- Transform to HSV and visualize the 3 channels.
- Set the saturation to 0.5 and visualize in the RGB space.
- Set the saturation to 0 and the value to 0.7 and visualize in the RGB space.
- Load the test images and analyze them in the RGB and in the HSV spaces.

Notes

- Upload a *single script* complete of all the necessary parameters and function calls to be used to achieve the goals of the practical.
- Comment the code.
- Provide the visualization of the results.
- Provide a code without absolute paths.