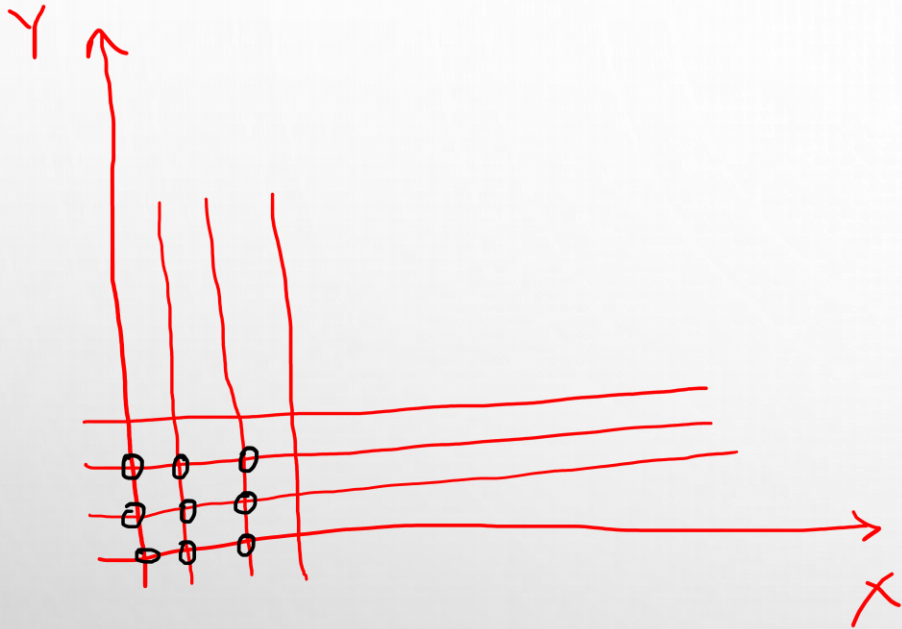


The background is a light gray gradient. It is decorated with numerous realistic water droplets of various sizes, some with highlights and shadows, scattered across the frame. In the upper center, there is a faint, circular logo or watermark that appears to contain a stylized 'S' or a similar symbol.

TRANSFORMATIONS, INTERPOLATION & RESAMPLING

Translation



$$t_x = 1 ; \quad t_y = 2$$

$$(0,0) \rightarrow (1,2)$$

$$(0,1) \rightarrow (1,3)$$

$$(0,2) \rightarrow \vdots$$

$$(1,0) \rightarrow \vdots$$

$$(1,1) \rightarrow \vdots$$

$$(1,2) \rightarrow$$

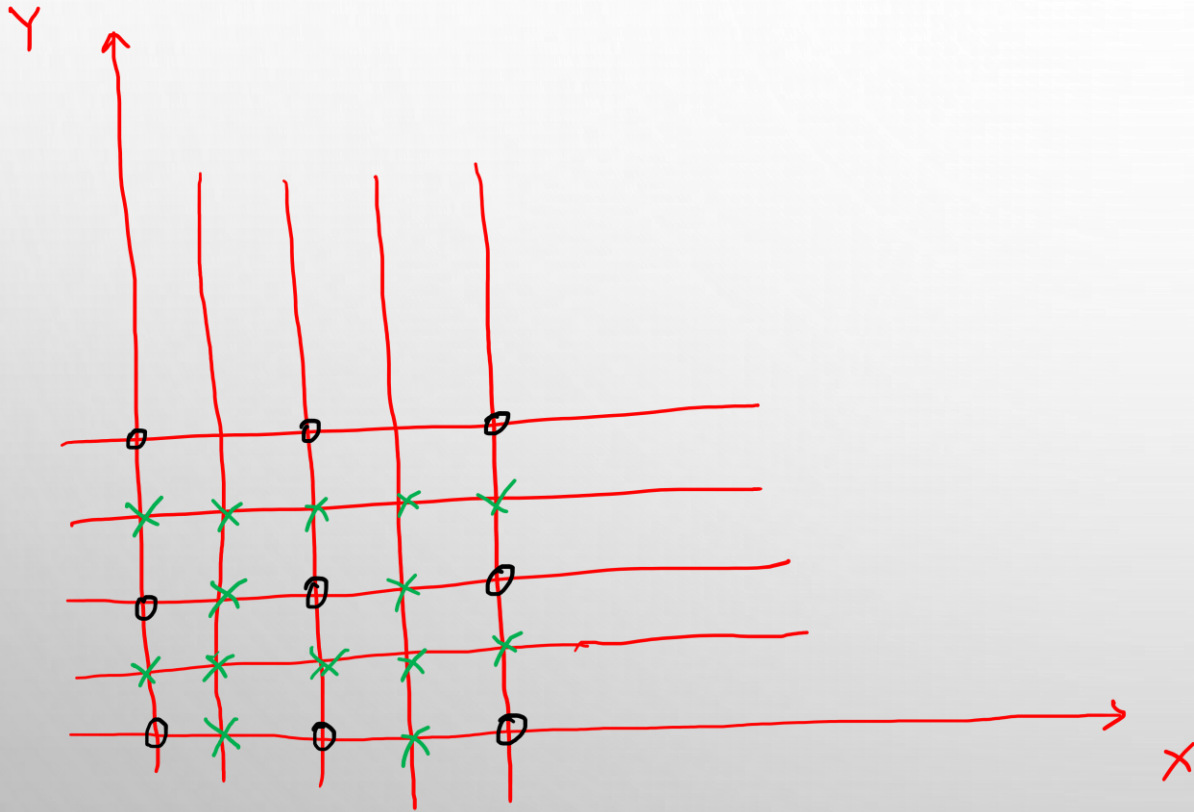
$$(2,0) \rightarrow$$

$$(2,1) \rightarrow$$

$$(2,2) \rightarrow (3,4)$$

$$C_x = C_y = 2$$

Scaling



$$(0,0) \rightarrow (0,0)$$

$$(0,1) \rightarrow (0,2)$$

$$(0,2) \rightarrow (0,4)$$

$$(1,0) \rightarrow (2,0)$$

$$(1,1) \rightarrow (2,2)$$

$$(1,2) \rightarrow (2,4)$$

$$(2,0) \rightarrow (4,0)$$

$$(2,1) \rightarrow (4,2)$$

$$(2,2) \rightarrow (4,4)$$

Scaled image by factor 3



Nearest Neighbour Interpolation



Bilinear Interpolation

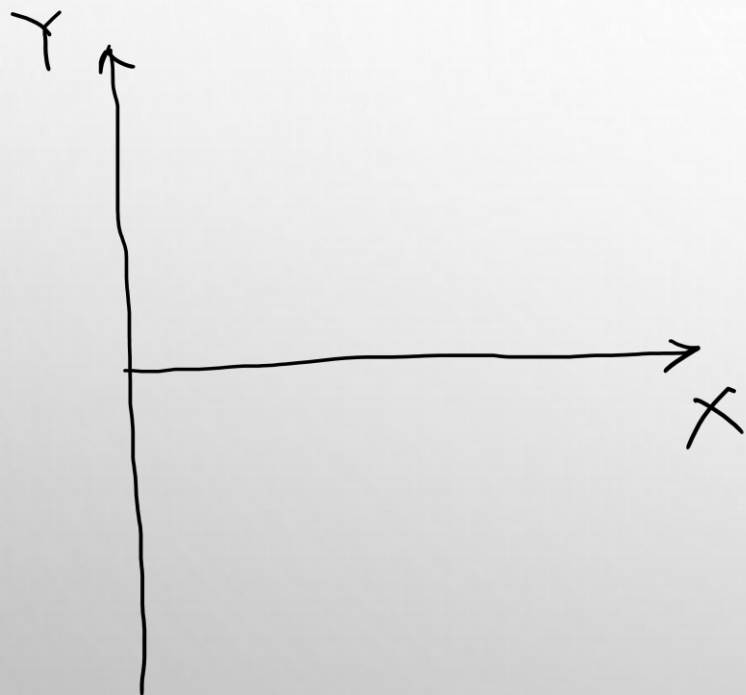


Bicubical Interpolation

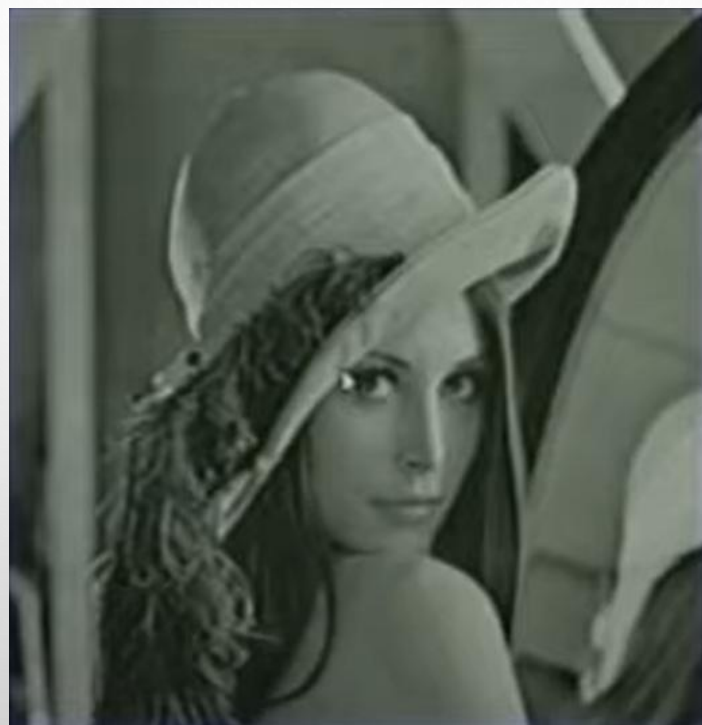


Rotation

$$\alpha = 45^\circ$$



$$\begin{aligned}(0,0) &\rightarrow (0,0) \rightarrow (0,0) \\(0,1) &\rightarrow (0.707, 0.707) \rightarrow (1,1) \\(0,2) &\rightarrow (1.414, 1.414) \rightarrow (1,1) \\(1,0) &\rightarrow (0.707, -0.707) \rightarrow (1,-1) \\(1,1) &\rightarrow (1.414, 0) \rightarrow (1,0) \\(1,2) &\rightarrow (2.121, 0.707) \rightarrow (2,1) \\(2,0) &\rightarrow (1.414, -1.414) \rightarrow (1,-1) \\(2,1) &\rightarrow (2.121, -0.707) \rightarrow (2,-1) \\(2,2) &\rightarrow (2.828, 0) \rightarrow (3,0)\end{aligned}$$



Rotated image by 30 degree



Bicubic Interpolation

