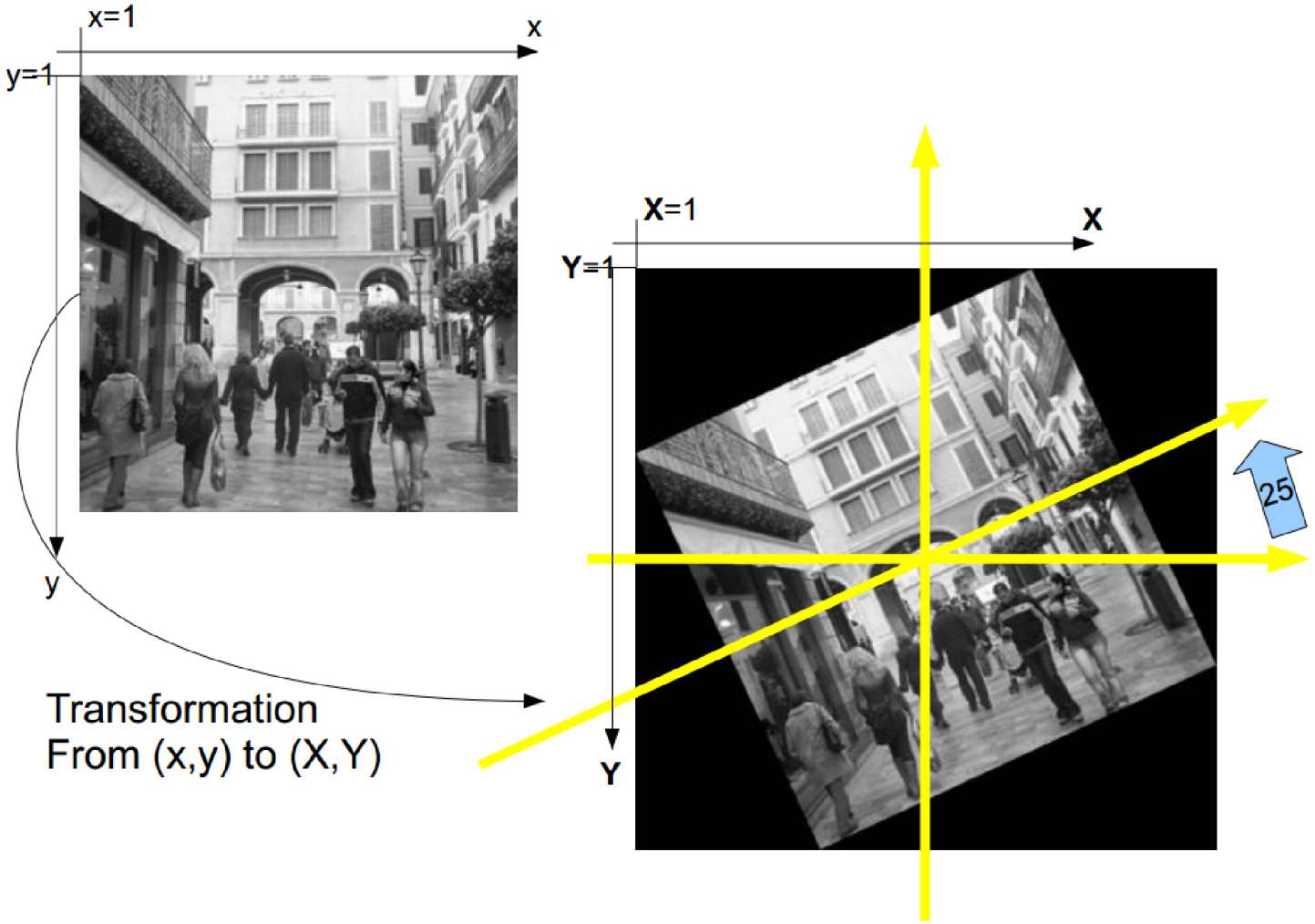
rotates image by 25 degrees in a counterclockwise direction around its center point.



Transformation using Matlab functions

- These four files in the folder are generated by imrotate and imresize functions.
  - im1r=imrotate(im1,25,'bicubic');
    - Rotate 25 degrees in a counterclockwise direction
  - im2r=imrotate(im2,30,'bicubic');
    - Rotate 30 degrees in a counterclockwise direction
  - im1s=imresize(im1,1.3,'bicubic');
    - Expand the image by factor of 1.3
  - im2s=imresize(im2,1.4,'bicubic');
    - Expand the image by factor of 1.4

Approximated transformation formula

Rotation

$$\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} r_{11} & r_{12} \\ r_{21} & r_{22} \end{bmatrix} \begin{bmatrix} x - cx \\ y - cy \end{bmatrix} + \begin{bmatrix} t_1 \\ t_2 \end{bmatrix}$$

rotd t

Scale

$$\begin{bmatrix} X \\ Y \end{bmatrix} = \begin{bmatrix} r_{11} & 0 \\ 0 & r_{22} \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Related files

Datasets	rotd	cx	cy	t
im1r	rotdr.txt	320	200	t1r.txt
im2r	rotd2r.txt	200	150	t2r.txt
im1s	rotd1s.txt			
im2s	rotd2s.txt			