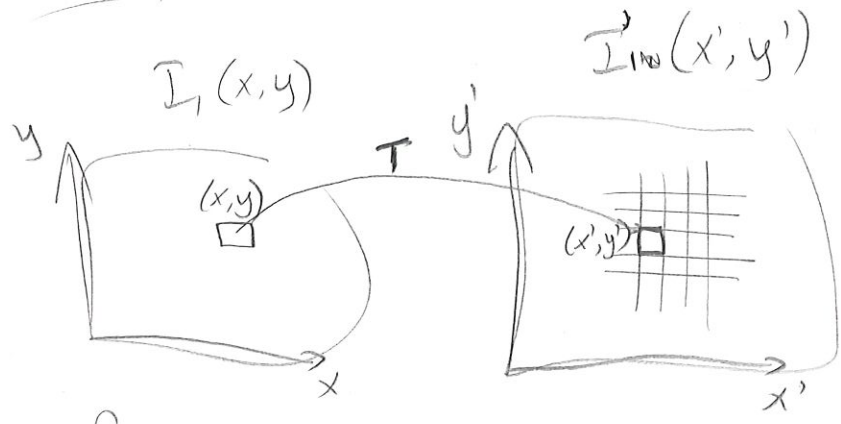


Forward Warping

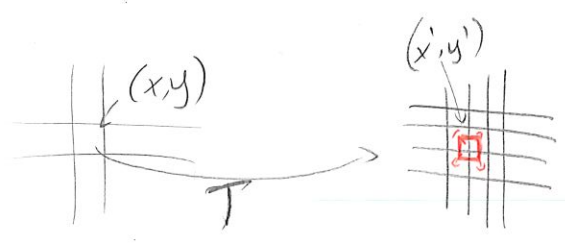


for x, y in I_1 :

$$x', y' = T \begin{bmatrix} x \\ y \end{bmatrix}$$

$$I_2[x', y'] = I_1[x, y]$$

Problem: what if x', y' are floats?



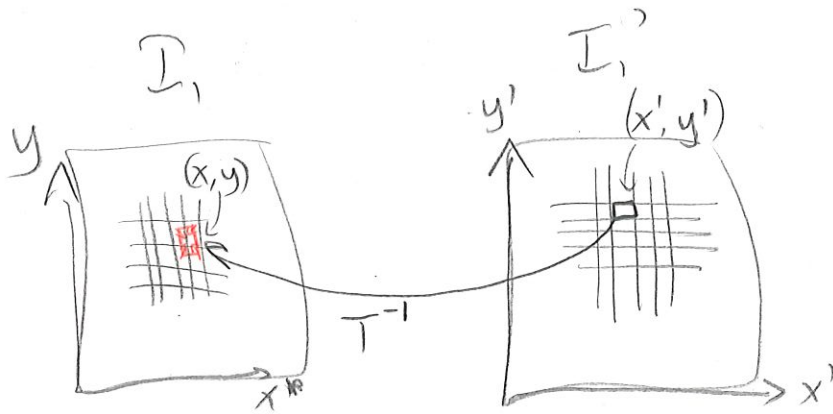
Possible answer: "splat" $I_1[x, y]$ to multiple pixels in $I_2[x', y']$

Issues with:

- Scale (e.g. T is a 16x uniform scale)
- holes remaining after splatting

Inverse Warping

(2)



for each (x', y') in I_1'

$$I_1'(x', y') = \text{interpolate}(I_1, T^{-1}(x', y'))$$

Bilinear Interpolation - placing a tent filter at non-integer coordinates!

Interpretations:

- a tent filter at non-integer coords
- weights determined by areas of rectangles at opposite corner
- interpolate linearly on two sides, then interpolate linearly between the two

$$I'(x', y') =$$

$$(x_2 - x)(y_1 - y) I(x_1, y_2)$$

+

