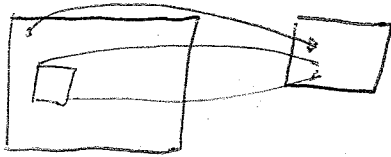


①

9/21/2006

Resize as Warp



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

pixel $\rightarrow$ some region

point sample $\leftarrow$ some region

inverse / forward splatting $\leftarrow$ way to look at convolution

What does this say about kernel size?

need to be big enough to cover everything (downsample)

why not no overlap?

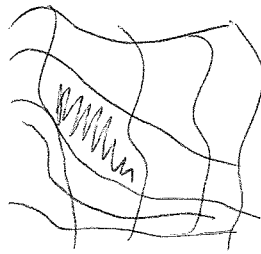
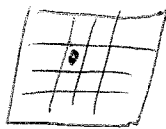


$\leftarrow$ not enough cutoff
might alias

9/21/2006 ②

Image Warping

$$x', y' = f(x, y) \quad \leftarrow \text{resize is special case}$$



pixel $\rightarrow$ some region
some region $\leftarrow$ pixel

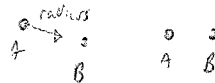
forward warp - splat
reverse warp - sample (need f^{-1})

How to filter?

- ① don't (point sample)
- ② size of kernel = size of area mapped

① derivative

② differences



③ capture shape

(gaussian/circle $\Rightarrow$ ellipse, or ...)

④ super sample



multiple samples per pixel
uniform resampling is easy

⑤ map little squares