types of techniques

- simple pixel modification
- interpolation/extrapolation
- compositing
- convolution
- dithering
- warping
- morphing
- misc. effects

dissolve

- film/video technique to fade from one shot to another

blending across time

\[ \alpha(t)\mathbf{I}_0 + (1-\alpha(t))\mathbf{I}_1 \]

blending example

\[ \alpha(t) \]

morphing = warping + blending
morphing = warping + blending

specifying the warp

interpolate endpoints for in-betweens

computing the warp between adjacent images
computing the warp between adjacent images - single line

warp - single line

u is fraction along line, v is distance to line

consider some special cases

warp - multiple lines
warp – multiple lines

compute weight for each line pair based on distance to \( p \) in destination

\[
\text{weight} \quad w = \left( \frac{L}{(a+d)} \right)^b
\]

where \( L \) is the length of the line segment, \( d \) is the distance from \( p \) to the line segment, \( a, b, \) and \( c \) are parameters to control the effect.

warp – multiple lines

compute source for each pair of lines using one-line algorithm

warp – multiple lines

compute displacement from \( p \) to each source point

demo
do it yourself

types of techniques
  • simple pixel modification
  • interpolation/extrapolation
  • compositing
  • convolution
  • dithering
  • warping
  • morphing
  • non-photo-realistic effects

non-photo-realistic effects
  • emboss
  • cubism
  • mosaic
  • etc.

See photoshop, gimp, or our own ip for more examples.