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Outline

- Introduction
- Fantasy Illustrator
- Tools and Methods
- Demo
Image is Fun

Can we edit images more easily?
Fantasy Illustrator
Powerful Image Editing Software
Image Editing Tools and Methods

Geometric Image Editing

- **Image Resizing**
  Seam Carving for Content-aware Image Resizing (SIGGRAPH 2007)

- **Image Cloning**
  Poisson Image Editing (SIGGRAPH 2003)
  Coordinates for Instant Image Cloning (SIGGRAPH 2009)

- **Image Inpainting**
  Object Removal by Exemplar-Based Inpainting (CVPR 2003)

- **Saliency Detection**
  Frequency-tuned Salient Region Detection (CVPR 2009)
Color/Tone Image Editing

- **Color Transfer**
  Color Transfer between Images (IEEE Computer Graphics and Applications 2001)

- **Tone Transfer**
  Two-scale Tone Management for Photographic Look (SIGGRAPH 2006)
Tool 1: Image Resizing

Seam carving for content-aware image resizing (SIGGRAPH 2007)

\[ s^* = \min_s E(s) = \min_s \sum_{i=1}^{n} e(I(s_i)) \]

Resizing with Seam Carving

\[ e_1(I) = \left| \frac{\partial}{\partial x} I \right| + \left| \frac{\partial}{\partial y} I \right| \]

Homogeneous Resizing
Tool 2: Image Cloning

Coordinates for Instant Image Cloning (SIGGRAPH 2009)
Tool 2: Image Cloning

Paint the Boundary

Delaunay Triangulation

Target Image

Mean Value Coordinate
Tool 3: Image Inpainting

Object Removal by Exemplar-Based Inpainting (CVPR 2003)
Tool 4: Color Transfer

Color Transfer between Images
(IEEE Computer Graphics and Applications 2001)
Tool 5: Tone Transfer

Two-scale Tone Management for Photographic Look (SIGGRAPH 2006)