

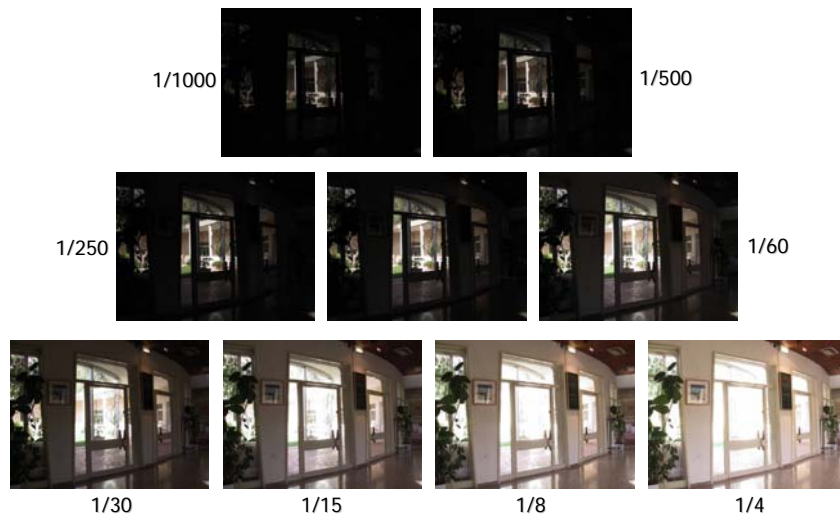
Advanced Topics in Computer Graphics

67535

Topics

- Computational Photography (4 weeks)
 - High Dynamic Range Imaging (HDRI)
 - Image Editing
- Fluid Dynamics for CG (4 weeks)
 - Simulation & rendering of smoke, fire, & water
- Digital Geometry Processing (6 weeks)
 - Concepts and tools
 - Parameterization
 - Construction, editing, & repairing meshes.

High Dynamic Range Imaging



High Dynamic Range Imaging



High Dynamic Range Imaging



Image Editing

- Seamless cloning:

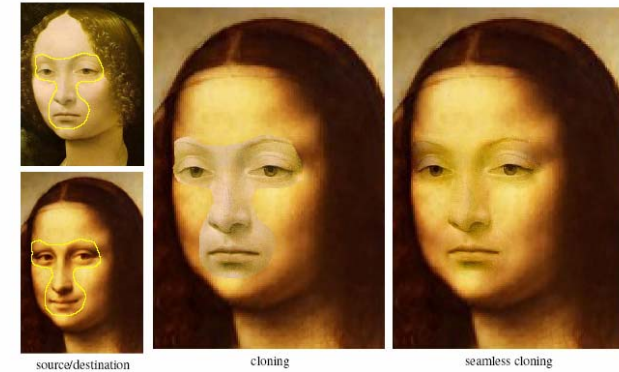


Image Editing

- Cutting

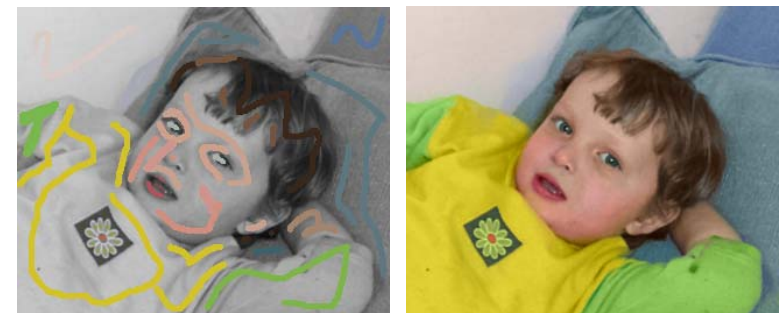


- Matting



Image Editing

- Colorization & recoloring:



Fluid Dynamics for CG

- Simulating and rendering Smoke, Fire, & Water:

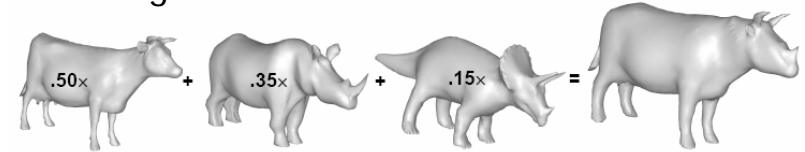


Digital Geometry Processing

- Performing operations on polygon meshes:

- Filtering: smoothing, sharpening, denoising

- Blending

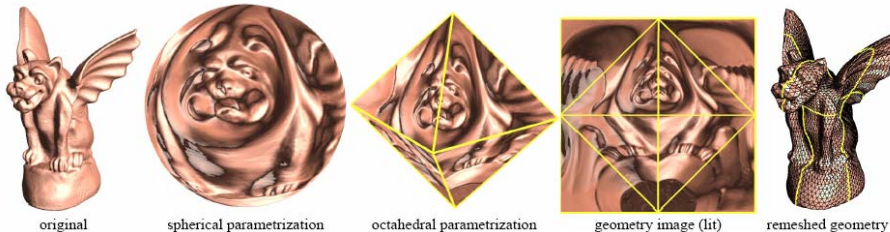


- Editing: cut-and-paste

- Compression

Digital Geometry Processing

- Concepts & Tools
 - Topology, differential geometry
- Parameterization & remeshing



Requirements

- Three programming assignments
 - One for each topic
 - C++
 - Teams of 2-3
- A written report (exact contents TBA)