2 - Outline

Purpose of paper

- to explore techniques based on mesh processing to persuade viewer attention with the end goal of expanding the scope of possibilities to include changes in geometry

Basically, techniques to direct a viewer to look at a certain regions of an object in an image more than others.

They establish a relationship between

- geometry modification
- viewer attention

then

- quantify human attention by measuring the eye movements of subjects as they examine meshes altered by the technique

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3 - Contributions (Read slide)

They…

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4 - Background (Ansel Adams, Mona lisa)

Artists have always used compositional techniques to persuade viewers to pay greater attention to specific characters or objects in their photos or paintings.

Doing so constructs an artist-determined visual hierarchy that leads a viewer through the scene in order of importance.

Some persuasive techniques

- Luminance,
- color,
- texture,
- orientation,
- focus

6 - Overview

In 3D, visual attention can be drawn to specific regions by

- simply having the selected pixels rapidly change or flash colors
- adding lighting and color saturation to the region

but this can be distracting.

The challenge

- is to gently guide a viewer through subtle changes to geometry

Their approach…
Read overview summary

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8 - Region selection

Input: A mesh + one or more selected Region Of Interest

What you see is what you get - "WYSIWYG" brush projection onto surface

Variable brush size = coarse-fine-control over selected regions

Circular, rectangular and spherical region selection shapes allow for better testing conditions

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11 - Persuasion Filters

Read slide…

In other words, the mean curvature value is easily controlled using laplacian based vertex displacement in the selected region of interest.

You can think about this as a ring of vertices directly surrounding vertex v_i with different displacements.

This works for vertex displacement of one-ring neighbors **but** for filtering they want to guide the magnitudes of the displacements by mesh saliency.

To do this they needed to generalize the definition.

12

The top function is for smoothing.
Smooth vertex v with a normal n. B is the resulting smoothed vertex.

The bottom function is for general displacement.

13

Read slide…

The goal of the paper

14

Read slide…

This equation defines the saliency change map (ΔS) and the curvature change map ΔC

15

Basically this describes that the overall curvature change map is computed as the summation of delta Ci.

16

Plot of the curvature change map.

This shows that there is an increase over the salient area

17

The images here show the resulting curvature change map based on the computed distance field.

This just generalizes the ROI used as can be seen in the bottom left image

The right image shows this for a square region

18

Read slide…

Pictures….

Read rest of slides…