WebGL Shader Editor with Kinect Data

CIS565 Final Project
Alpha Presentation

Takashi Furuya, Qiong Wang

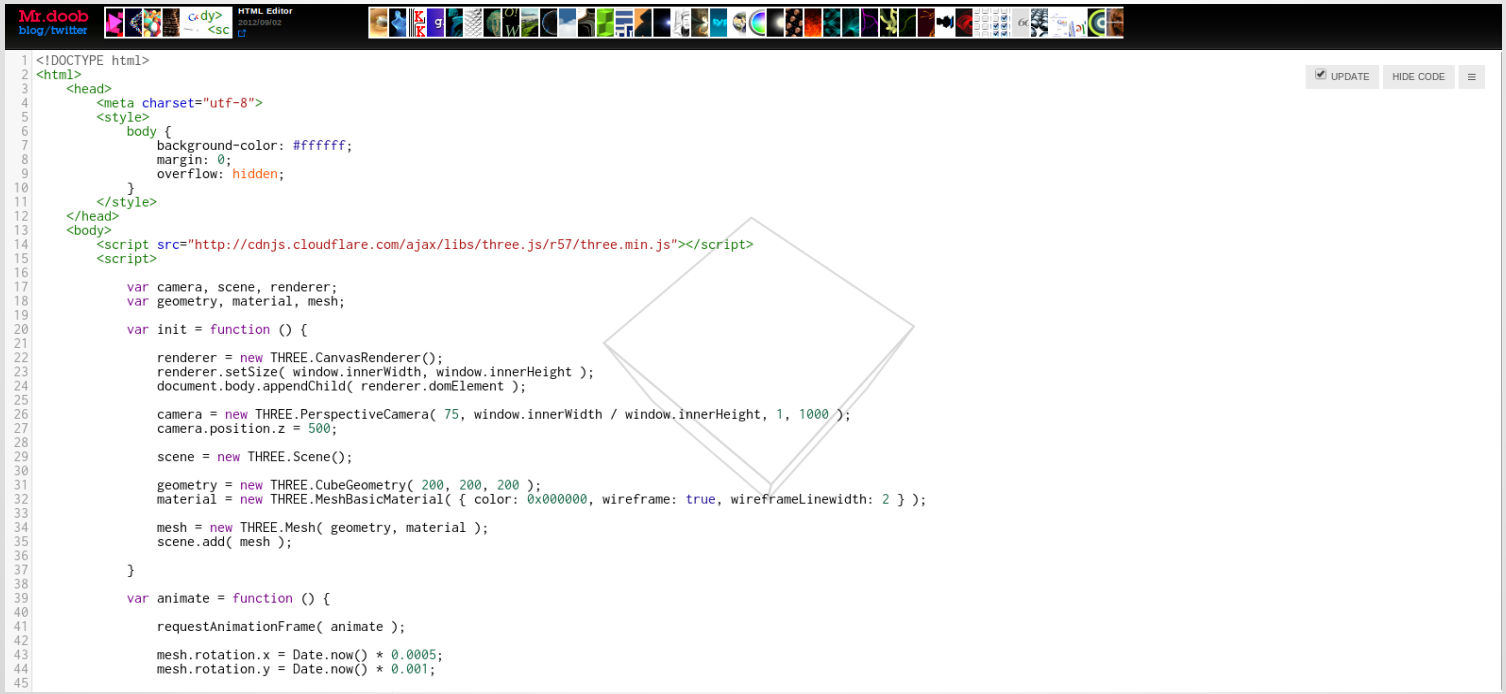
Objective

- Create an online shader editor (like Shader Toy) with input from Kinect.

- Create 3 demos

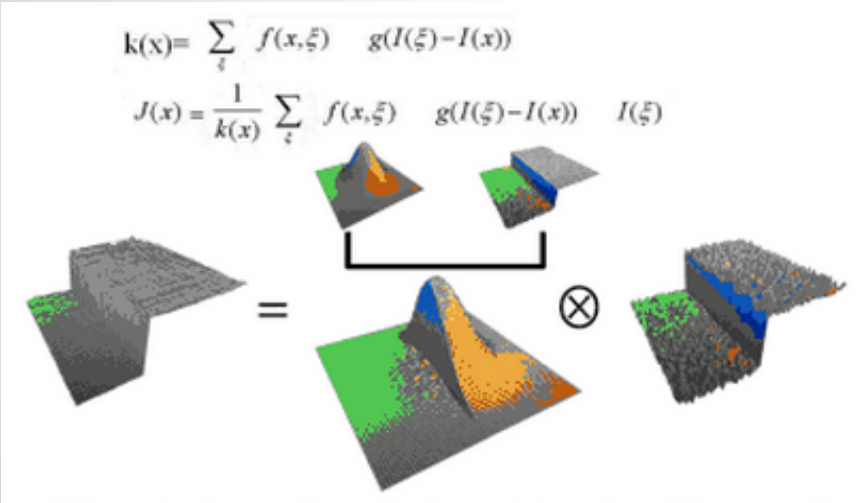
Demo 1

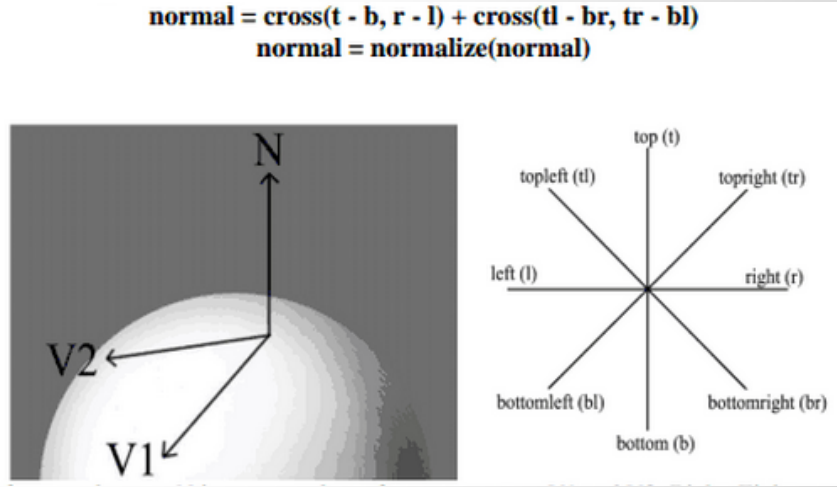
Vertex morphing: http://www.mrdoob.com/#/146/html_editor



Demo 2

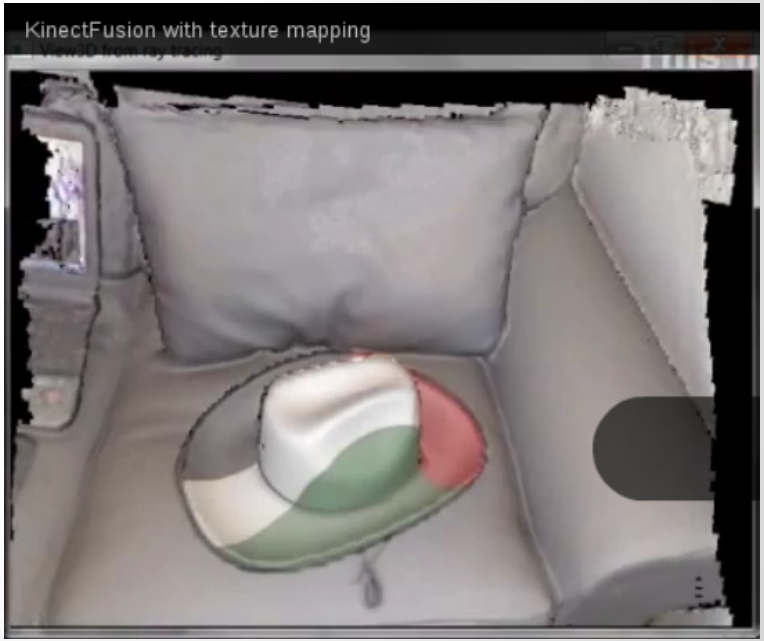
Artificial Lights: http://www.azerdev.com/wp-content/uploads/2013/02/IGS_Report.pdf





Demo 3

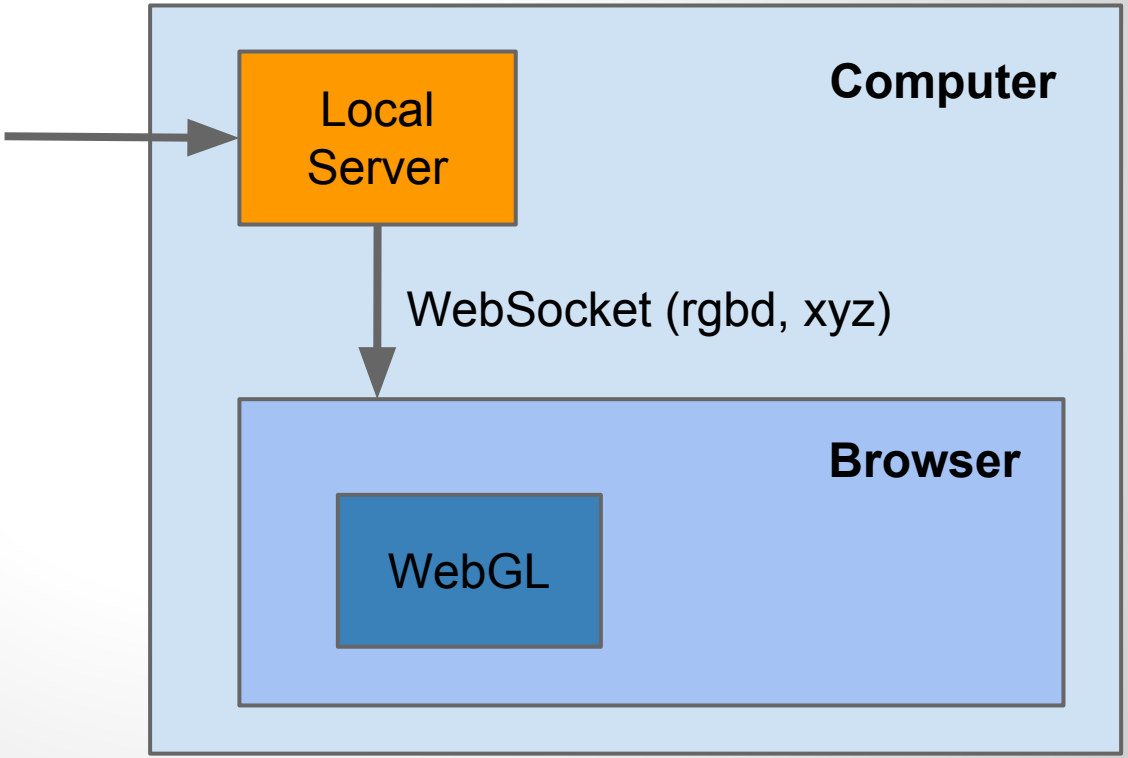
Material editing (colors, diffuse/specular) http://www.youtube.com/watch?v=6o0wjCvKe5c



Current Status - Live Demo

Method

Kinect



Plans & Challenges

- Challenges
  - Process streaming data for WebGL usage efficiently.
  - Remove noise from raw data.
  - Update the shader.
- Plans
  - 2D depth to 3D point cloud.
  - Shader editor.
  - Demos.

Google Chrome Extension

NPAPI

- Can launch external program
- Is used by
  - Silverlight
  - Unity
  - Google Earth
- Is being phased out (unavailable after Sept 2014)

Alternatives

- NaCl
  Sandboxed (prohibits external device access)
- Chromium fork
  - Long dev. time
  - Users can’t test
- Separate program
  - Requires installer to modify Windows registry (e.g. launch when Kinect is connected)