WebGL BOF
SIGGRAPH 2011

Presented by the Khronos Group

Today's Speakers

Introduction and State of WebGL
Kenneth Russell, Google, Inc. and Chair, WebGL WG

Web Browsing in 3D
Alex Bostandjiev and Joshua Trask, Google, Inc.

Google Body's Geometry Compression Open-Sourced
Won Chun, Google, Inc.

Volume Raycasting in WebGL
John Congote, Vicomtech

WebGL on Android and Tegra
Neil Trevett, Barthold Lichtenbelt, and Antti Rasmus, NVIDIA

Today's Speakers (Cont'd.)

Request for articles: OpenGL Insights Book
Patrick Cozzi, University of Pennsylvania

3D Printing Demo
Mark Danks, Kodama Studios

WebGL and html5 as a game platform
Erik Möller, Opera Software

BrainBrowser: Brain Exploration on the Web
Nicolas Kassis, McGill University

PhiloGL
Nicolas Garcia Belmonte, Sencha Labs

Today's Speakers (Cont'd.)

Web-Based Medical Simulation Using WebGL
Woojin Ahn, Rensselaer Polytechnic Institute

Chrysaora
Aleksander Rodic

Porting mobile apps to WebGL
Ashraf S. Hegab, Orange Labs

360 Degree Video Player
Alexandre Jenny, Kolor

X3DOM: Fast content delivery for declarative 3D scenes
Johannes Behr, Fraunhofer Institute

State of WebGL

First version of spec shipped at GDC 2011

WebGL 1.0.1 coming soon (fall?)

- Many corner cases clarified
- Conformance suite updated
- Cross-domain security issue addressed

State of WebGL

First version of Typed Array spec ratified earlier this year

Editor's draft includes enhancements for bulk data transfer among web workers

HTML5 spec updated in support

Discussion occurred on public-webapps@w3.org

Will enable real multiprocessing on the web

State of WebGL

Tremendous amount of development activity around WebGL

New demos, games, applications, libraries and development frameworks coming out nearly every day

Working group aims to support development efforts in every way possible

Adding features and extensions where necessary; e.g. compressed texture support

- Improving implementations' performance and reliability

State of WebGL

Top priority for the working group is addressing denial of service attacks

GL_ARB_robustness' lost context support has been integrated in to at least one WebGL implementation

- More coming

Stress testing with DoS samples in cooperation with GPU vendors

State of WebGL

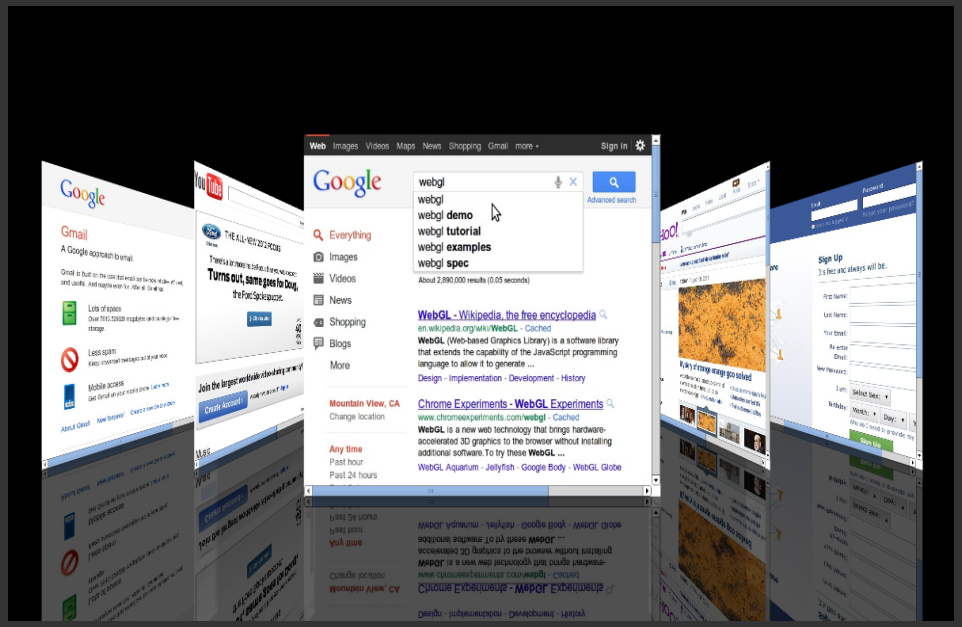
New and cool: experimental extensions supporting HTML rendering into a WebGL texture

- Mozilla's Tilt extension for Firefox
- Chrome Offscreen Tabs experimental extension API

Will support rendering of interactive HTML content into 3D space

Note: HTML rendering results are security sensitive, so this functionality requires additional privileges

Web Browsing in 3D



- A new Chrome Extensions API called "Offscreen Tabs" (details)
- Allows interaction with multiple web pages on the screen at the same time
  - *display:* update HTML <img>, <canvas>, or WebGL texture
  - *interaction:* forward JavaScript mouse and keyboard events
- In combination with WebGL, create **3D browser environments**

As Seen on Google Body

http://code.google.com/p/webgl-loader/

Public release of technology similar to that used to generate anatomy meshes in Google Body

Very raw, but includes:

- Simple Wavefront .OBJ file parser (no material support yet)
- Simple vertex cache optimizer
- UTF-8 based binary encoder

Live samples:

- A Hand (small)
- "Ben" (large)