WebGL Working Group Updates

WebGL Meetup, May 2021

Agenda

Cool WebGL Stuff

WebGL 2.0 in Safari Updates

BaseVertex/BaseInstance Extensions

WebGPU Status

Cool WebGL Stuff

- Lots of great web sites and products using WebGL are released every day!

- Khronos' WebGL working group tries to find and highlight these to the community

- They're sent via email every couple of weeks to the WebGL Dev List
  - Also archived on this blog

- Please join the community, and share your own creations and findings!

WebGL 2.0 In Safari Updates

- As discussed - WebGL 2.0 is coming to Safari!
- The latest code can be tested on both macOS and iOS
  - macOS: download Safari Technology Preview
  - iOS: available in iOS 14 and betas; turn on WebGL 2.0 in Safari Settings
  - Look for EXT_color_buffer_half_float extension on WebGL Report on iOS; indicates quite recent code
  - iOS betas will have the newest code
- Unfortunately, not yet turned on by default, but continuing to encourage Apple to do so :)

WebGL 2.0 In Safari Updates

- Great collaborations still ongoing
- Apple has turned on ANGLE's Metal backend in STP r124
  - Continuing to make major improvements

- Follow progress of the project
- You can soon rely on availability of WebGL 2.0 everywhere!
- Invest the time to upgrade your applications to WebGL 2.0 now!
- Test WebGL 2.0 in Safari, file bugs seen in WebKit's Issue Tracker

BaseVertex/BaseInstance extensions

- Recent consensus in working group for how to expose BaseVertex/BaseInstance functionality, including in multi-draw form
- These improve geometry batching by allowing multiple models' vertices to easily be placed in the same buffer object
- Watch for these in upcoming posts to public_webgl and webgl-dev-list
- Potential use cases described here
  - https://www.slideshare.net/CassEveritt/approaching-zero-driver-overhead
  - https://www.g-truc.net/post-0518.html
  - https://stackoverflow.com/questions/53460871/glmultidrawelementsindirect-custom-drawid-with-multiple-instances-per-drawelemen

WebGPU Status

- Spec and implementations are moving forward well
- Now's a great time to try out the specification, shading language and various implementations
  - They're all behind flags in web browsers right now
  - Don't browse the open web with these flags turned on yet
- WebGPU is the spec where compute shaders will be delivered to the web
  - WebGL 2.0 Compute spec is no longer being developed
- Today's presentation by Kai Ninomiya will give a great introduction to the API and what it can do!

Presentations

Great group of presenters today!

- Kai Ninomiya, Google - Intro to WebGPU
- Markus Schütz, TU Wien - Point Cloud Rendering with Potree
- Ian Keough, Hypar - Generative Design

We'll answer your Q&A live at the end of the session!