

Graphics Systems

CS418 Computer Graphics

John C. Hart

A Brief History of Graphics Libraries

- 1980's IrisGL – Silicon Graphics, Inc.
- 1988 RenderMan Shading Language – Pixar
- 1992 OpenGL – SGI & Architectural Review Board
- 1993 Mosaic – NCSA
- 1995 Direct3D – Microsoft
- 1995 Mesa3D – open source OpenGL (for Linux PC's)
- 1999-2004 programmable shaders
- 2003 OpenGL ES – embedded systems
- 2006 WebGL – based on OpenGL ES 2.0
- 2014 Metal – Apple
- 2015 Vulkan - Kronos
- 2017 WebGL 2 – based on OpenGL ES 3.0

WebGL

- Library for 2-D and 3-D graphics in web pages
- Khronos standard, cross platform, royalty free
- JavaScript library, supported in most/all browsers
- Renders into an HTML5 <canvas> element
- WebGL is spare
 1. Create a graphics context
 2. Load vertex and fragment shaders
 3. Load a buffer object with geometry
 4. Draw
- Libraries
 - Yes: glmatrix.js – matrix helper functions
 - No: three.js, TWGL, etc.