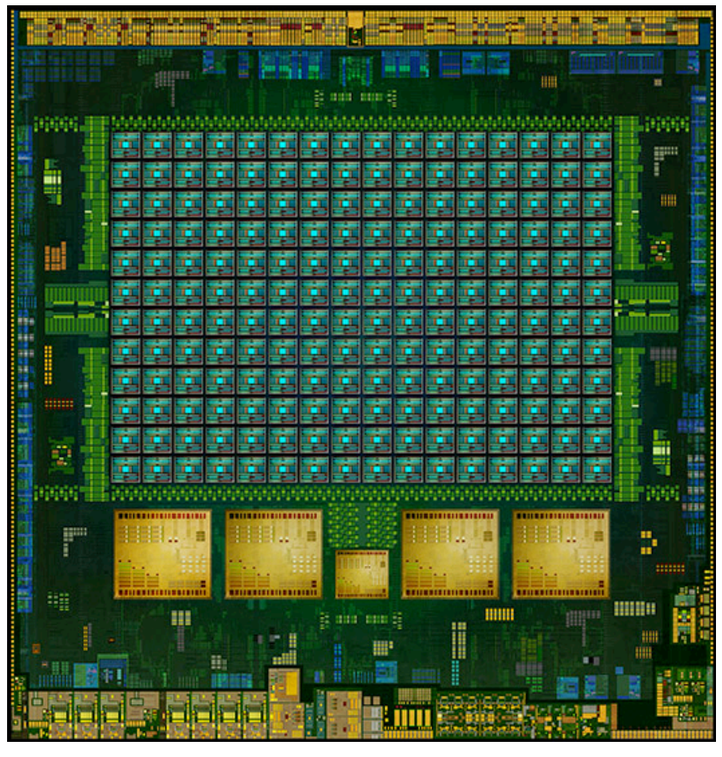
OpenGL ES



OpenGL for Embedded Systems

Special version for Embedded Systems

Why?

- Older OpenGL less efficient - ES focuses only on efficient methods
- More emphasis on integer operations
- Embedded systems have worse memory bandwidth!

Higher performance, lower energy!

Closer and closer to OpenGL

OpenGL and ES are converging! Inefficient parts of OpenGL are deprecated.

Supports shaders since version 2.

Current version: 3.2. Includes recent additions to OpenGL like compute shaders, geometry and tesselation shaders.

WebGL

OpenGL for web browsers!

Based on GLES 2.

Host program *must* be coded in JavaScript!

Performance

CPU part, not so good. Limited by JavaScript.

GPU part runs on the GPU as usual - can be very good!

More important than ever to put workload on the GPU!

Problems

Mostly everything outside OpenGL! JavaScript add-ons for loading files, user input. OpenGL maps over well from your desktop solutions.

You will need the usual package of add-ons for loading textures, models, vector operations...

Another problem: JavaScript not suitable for large programs. (Compile to JavaScript instead!)

Perfectly useable even for large animations!