CS6533/CS4533 INTERACTIVE COMPUTER GRAPHICS (Fall 2018)

Description

This course introduces the fundamentals of computer graphics with hands-on graphics programming experiences. Topics include: graphics software and hardware, 2D line-segment scan conversion, 3D transformations, viewing and projection, programmable shaders, polygon scan-conversion, hidden-surface removal, illumination and shading, compositing, texture mapping, effects of shadow, decal, lattice, fog, firework, etc, ray tracing and radiosity, and so on.

Prerequisites:

CS 5403 (Data Structures) or equivalents, and knowledge of C/C++ programming.

Regularly check the following for the latest updates:

Links for on-line documents:
1. OpenGL on-line manual (a *.tar.gz file of many *.html files)
2. GLUT on-line manual ("http://www.opengl.org/resources/libraries/glut/spec3/spec3.html")

Links for downloading the OpenGL related packages (for Windows and Linux you need both 1. and 2. below; for MacOS you only need 1. below (see "Compilation and Installation Instructions for OpenGL on Windows" and "OpenGL Compilation on Mac OS or Linux using CMake" below):
1. GLUT 3.7 ("glut-3.7.6-bin.zip")
2. GLEW 1.5.1 ("glew-1.5.1-win32.zip")

Links for OpenGL Information:
"http://www.opengl.org/"
"http://www.sgi.com/products/software/opengl/"

TA: Xiaoran Ni (Email: xn287@nyu.edu. Office Hours: Mondays 3:30-5:30pm, in the lab 10.038, 10th floor of 2 MTC (there are two rooms labeled 10.038; we use the one whose door has no glass. If the lab 10.038 is too crowded, we may move to the dining area outside 10.038.)).

Syllabus: (.pdf file)

Compilation and Installation Instructions for OpenGL on Windows

OpenGL Compilation on Mac OS or Linux (written by a former TA Zebin Xu):
"OpenGL Compilation on Mac OS or Linux using CMake" (Instructions)

Handout: example.cpp ("Example.tar.gz") --- Example Program for Basic OpenGL Program Structure
Note:
After you un-zip and un-tar the file, there are two files: "example.cpp" and "CMakeLists.txt". On Windows you only need "example.cpp". On Mac OS or Linux you need both --- put them in the same directory; see "OpenGL Compilation on Mac OS or Linux using CMake" Sections 1-4 for more details.

Assignment 1

Last update: 9/14/18.