Now Playing:

Welcome to COMP 575 Introduction to Computer Graphics

Gloria's Step (Take 2)
from "Sunday at the Village Vanguard"
Live, June 25, 1961
The Bill Evans Trio
Bill Evans - Piano
Scott LaFaro - Bass
Paul Motian - Drums

Introduction to Computer Graphics

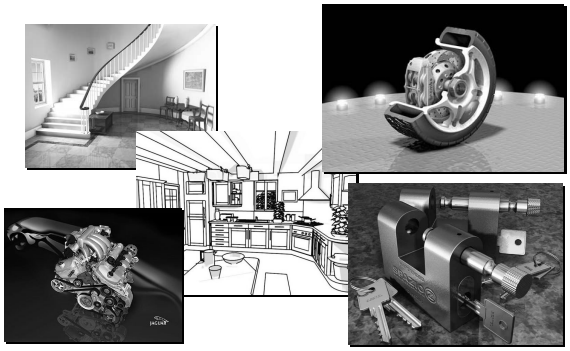
COMP 575
Fall 2007

Rick Skarbez, Instructor

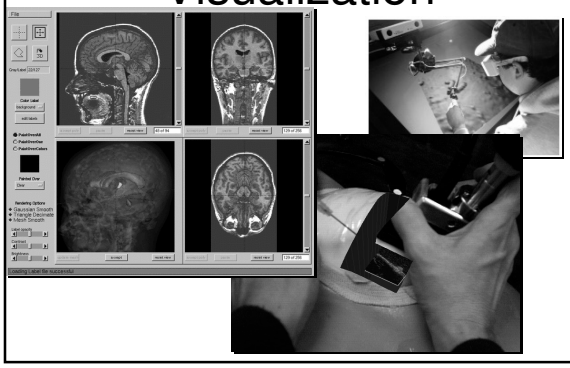
August 21, 2007

Gaming

Industrial

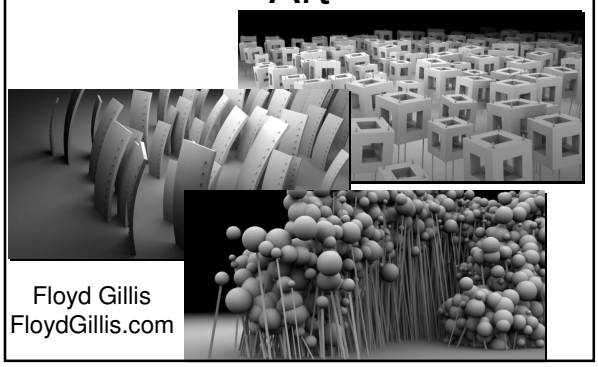


Visualization



Film & Television

Art



Floyd Gillis
FloydGillis.com

About COMP 575

- Instructor:
  - Rick Skarbez
  - skarbez@cs.unc.edu
  - Sitterson 313 (For Now)
- Office Hours (tentative):
  - Tuesday 10:30-12:00
  - Wednesday 1:30-3:00
  - By appointment

WARNING

- This is an upper-level undergrad computer science course!
- If you have concerns, please see me
- Official Prerequisites:
  - COMP 410: Data Structures
  - MATH 547: Linear Algebra for Applications

Why You Should Not Take This Class

- To learn Maya, 3D Studio MAX, Photoshop, Illustrator, SoftIMAGE, Lightwave, Flash, or other pre-existing graphics tools
- To gain a cursory computer science background
- To fulfill a breadth requirement, unless you are a skilled programmer

Why You Should Take This Class

- To see the world in an entirely new way
- To put your CS chops to the test
- To learn how to model scientific systems
- To gain experience for film industry and game design jobs
- To draw pretty pictures

Rick Skarbez (me)

- 3rd year graduate student
- Computer Engineering B.S. from Penn State

My Teaching Philosophy

- Lectures are the heart of the academia
  - My job is to make them worthwhile
  - Communicate more than formulas
- 75 minutes is a very long time
  - I will summarize the lecture as I go along
  - 2-Part lecture structure
- I like to repeat myself

Three Ways to Teach CG

- 1 - API Driven (OpenGL or DirectX)
  - Realtime - games and visualization
- 2 - Ray Tracing (Physics Simulation)
  - Offline - film and television
- 3 - A Little of Both

Class Participation Break

- Name
- Major/Minor/Year
- Hometown
- What are you doing here?

Easy First Assignment

- Step 1) Send me an email
  - skarbez@cs.unc.edu
- Step 2) List a few films you associate with CG and/or favorite games(influential or personal favs.)
- That's it

"Official" Course Description

~~Hardware, software, and algorithms for computer~~ graphics. Scan conversion, 2D and 3D transformations, object hierarchies, hidden surface removal, clipping, shading, and antialiasing.

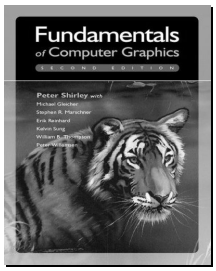
~~Not for graduate computer science credit.~~

My Course Description

~~This course will provide an introduction to the~~ field of computer graphics by exploring two different approaches to rendering that have arisen subject to different constraints: rasterization and ray tracing. The mechanics of each method will be discussed, along with the relative strengths and weaknesses of the two methods.

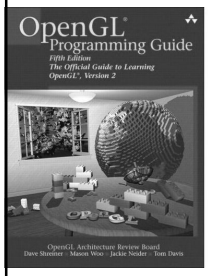
Textbook Options

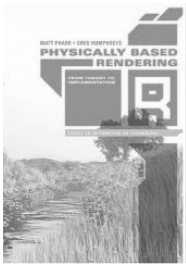
Suggested

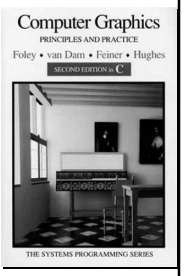


Textbook Options

Supplemental Texts

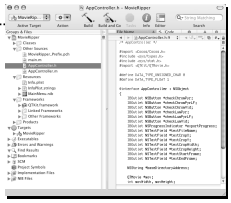






Source Code

- Please, use a C derived language
  - C, C++, Managed C++, C#, or Objective-C
- I will accept Java, but it is discouraged
- Windows or Mac OS X executables
- Code/App submission process TBD



Grading Rubric

- 25% Written Assignments (approx. 5)
- 25% Programming Assignments (approx. 4)
- 25% Final Exam
- 25% Final Project
  - 10% Project Update/Prototype
  - 15% Final Project

Late Policy

- Deadlines:
  - End of class for written assignments
  - 11:59pm EST for programming projects
- Late Work:
  - 0-120 Hours Late (Incl. Weekends): .5x Grade
  - After 120 Hours (Incl. Weekends): 0
- 168 free hours to use as you see fit
  - No credit for unused hours

Honor Code

- Do not copy!
- I realize this course is difficult
  - I expect you will want to work together on tough problems
  - However, work together on conceptual understanding, not code development
- I will gladly clarify any aspect of the Honor Code

Miscellanea

- Office hours are not just for problems
- Expect changes in Syllabus and Schedule
  - Syllabus will not change after drop deadline - my contract with you
- UNC Graphics Lunch Wednesdays at 12:30 in SN 284

That's It For Today

- Remember the assignment
- Step 1) Send me an email
- skarbez@cs.unc.edu
- Step 2) List a few films you associate with CG and/or favorite games (influential or personal favs.)
- (Optional) Suggest DVD special features