The Content and Role of the Computer Graphics Course in the Liberal Arts

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2008 Consortium for Computing Sciences in Colleges – Northwestern Region

SIGGRAPH Graphics Resources

- SIGGRAPH Conference - http://www.siggraph.org
- Education Component of SIGGRAPH
  - Education Committee http://education.siggraph.org/
  - Education Resources (next slide)
  - Education Program: presentations at the conference of particular interest to educators
- New pricing structure so one can attend for one day.

SIGGRAPH Education Committee

- Community Building
- Resources: CGEMS, cgSource, Education Index, Listserv
- Projects: Knowledge Base, Game & Interactive Media Framework, Visualization, Undergraduate Research Alliance, etc
- Student Competitions: Space-Time, FJORG
- etc

Ray Tracing as Part of a CG Course

- Current Course:
  - 3 weeks ray tracing
  - Remaining weeks OpenGL using JOGL
- Ray tracing
  - implement the main loop, lighting, shapes & intersections, shadows.
  - Discuss reflections, refractions, textures, z-buffers

What does Ray Tracing Bring

- Takes the mystery out of 3D graphics
- Learn about
  - Modeling and abstraction
  - Basic vector calculations
  - CG Components: camera, screen, coordinate systems
  - Phong lighting model

Downsides/Upsides

- Downsides
  - Takes away precious time from learning OpenGL
- Upsides
  - Much of what is learned is directly applicable to OpenGL
  - Difficult to get the same level of understanding when just using OpenGL esp with lighting

OpenGL 3.0 and Programmable Shaders

- In OpenGL 3.0, programmers must write their own shaders.
- Like ray tracing, shaders require the programmer to have a deeper understanding of how vertices and fragments are processed and how lighting is implemented.