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

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SIGGRAPH Graphics Resources

- 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.