CS5502 数位影像合成(Digital Image Synthesis)
Fall 2006
http://www.cs.nthu.edu.tw/~chunfa/cs5502

Classroom: 資電館 Room 434 128 (changed!)
Time: M5M6R6 (Monday 1:10 pm – 3:00 pm and Thursday 2:10 pm – 3:00 pm)
Instructor: 張鈞法 (Chun-Fa Chang)
    Office Hours: Appointment by email.
    Office: 資電館 Room 642
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Textbooks: Physically Based Rendering, by Matt Pharr and Greg Humphreys. (on reserve at NTHU library).

References:
1. SIGGRAPH Proceedings (available online at ACM Digital Library).
4. An Introduction to Ray Tracing, by Andrew Glassner (on reserve at NTHU library).

Grading: Assignments: 30%, Paper Presentation: 30%, Project: 30%, Class Participation: 10%

Workload (subject to change):
1. Programming Assignments: There will be two or three: the first one is a ray tracer and the second one is either a radiosity program or a Monte Carlo path tracer. Don’t worry about its complexity. Examples or pseudo codes are available to make them easier and enjoyable to you.
2. Paper Presentation: You are expected to study a technical paper thoroughly and present its key ideas to the class.
3. Project: The class will be divided into teams of 2-3 persons, with each team working on a different project. At the 8th week, each team should finish the proposal. At the 12th week, each team will present the current progress. Before the end of semester, each team will present its results and demonstrate the finished product.

Topics and Schedule:
- Overview and Introduction (1 week)
- Ray Tracing and Reflection Models (2 weeks)
- Antialiasing (1 week)
- RenderMan and Pixel Shaders (1 week)
- Radiosity (1 week)
- Monte Carlo Path Tracing (1-2 weeks)
- Precomputed Light Transport (1 week)
- Texture Mapping and Projective Geometry (1 week)
- Image-Based Rendering (1 week)
- Paper Presentations and Project Demos (5-6 weeks)