Seminar in Visual Computing
Advanced Topics in Computer Graphics
Fall Semester 2007
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Prof. Dr. Mark Pauly
Goals of the Seminar

• Get you acquainted with research in computer graphics
• Improve your ability to critically read and analyze scientific papers
• Strengthen your presentation skills
• Stimulate active learning through group discussions, improve argumentation skills
What you have to do

• Present one paper in class
  – read the paper and necessary background material
  – prepare slides and give the presentation
  – lead the discussion in class

• Read the other papers before class

• Participate in the discussion

• Grading:
  – 75% presentation
  – 25% group discussion
Topics

• Physics-based Modeling and Animation
• Character Animation
• Shape Deformation
• Rendering
2. October

Stam

Stable Fluids
SIGGRAPH 2001
9. October

Terzopoulous, Platt, Barr, Fleischer

Elastically Deformable Models

SIGGRAPH 1987
16. October

Celniker, Gossard

Deformable curve and surface finite-elements for free-form shape design

SIGGRAPH 1991
23. October

Ngo, Cutrell, Dana, Donald, Loeb, Zhu
Accessible Animation and Customizable Graphics via Simplicial Configuration Modeling
SIGGRAPH 2000
30. October

Bregler, Loeb, Chuang, Deshpande

Turning to the master: motion capturing cartoons

SIGGRAPH 2002
6. November

Sumner, Zwicker, Gotsman, Popovic
Mesh-Based Inverse Kinematics
SIGGRAPH 2005
13. November

Barr

Global and local deformations of solid primitives
SIGGRAPH 1984
Gain, Dodgson

Preventing Self-Intersection under Free-Form Deformation

IEEE TVCG 2001
Botsch, Pauly, Wicke, Gross

Adaptive Space Deformations Based on Rigid Cells

Eurographics 2007
4. December

Weyrich, Flaig, Heinzle, Mall, Aila, Rohrer, Fasnacht, Felber, Oetiker, Kaeslin, Botsch, Gross

A hardware architecture for surface splatting

SIGGRAPH 2007
11. December

Kajiya
The Rendering Equation
SIGGRAPH 1986
18. December

Levoy, Hanrahan
Light Field Rendering
SIGGRAPH 1996
Some Remarks

• Goal of your presentation:
  – Impart knowledge to the audience (not show off that you understood the paper)
Preparation

• Read the paper and background material
• Make sure you understand the subject
  – talk to assistant or contact authors if questions remain
• Think about potential visual aids, e.g., demos, videos, etc.
• Consider other material, e.g., handouts
Structure your talk

• Introduction
  – general context, motivation, problem statement

• Contents of the paper
  – core points of the paper, key contributions, relevant results, relation to other work

• Discussion
  – evaluate the paper from your own perspective
  – discuss pros and cons, talk about your own ideas for future work
Get your message across

• Stress the important points
  – “Tell'em what you are going to tell'em. Tell'em. Then tell'em what you told'em.”

• Consider your audience
  – what prior knowledge can you expect?
  – how can you make sure people will be able to follow your presentation?
The Talk

• Practice your talk!
  – get feedback from others or use video camera
  – check the timing

• Talk to the audience not to the screen

• Talk clearly, not too slow or too hasty

• Give the audience time to understand what you tell them
Things to avoid

• Exceed the time limit
• Never practice the talk
• Lose yourself in detailed, confusing explanations
• Too many slides, equations, too many bullets
• Fonts too small, too much text
• Discontinuous speech
• Ignore the audience
Some quotes

• “Before I speak, have something important to say.” -Groucho Marx

see:http://www.erp.wisc.edu/profdev/Scientifically_speaking.pdf
Some quotes

• “A speech is a solemn responsibility. The man who makes a bad speech to two hundred people wastes only half an hour of his own time. But he wastes one hundred hours of the audience’s time-more than four days—which should be a hanging offense” - Jenkin Lloyd Jones

see:http://www.erp.wisc.edu/profdev/Scientically_speaking.pdf
Some quotes

- “I’m rather like a mosquito in a nudist camp: I know what I ought to do, but don’t know where to begin.” -Stephen Bayne

see: http://www.erp.wisc.edu/profdev/Scientifically_speaking.pdf
Some quotes

• “Be sincere; be brief; be seated.” - Franklin D. Roosevelt

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Some quotes

• “Many attempts to communicate are nullified by saying too much.” – Robert Greenleaf

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Some quotes

• “The human brain starts working the moment you are born and never stops until you stand up to speak in public.” - George Jessel

see: http://www.erp.wisc.edu/profdev/Scientifically_speaking.pdf
Some quotes

• “In science as in love, too much concentration on technique can often lead to impotence.” -P.L. Berger, Sociologist and author