Seminar in Visual Computing

Advanced Topics in Computer Graphics

Fall Semester 2007

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cgl
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ETH
APPLIED
GEOMETRY
GROUP

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

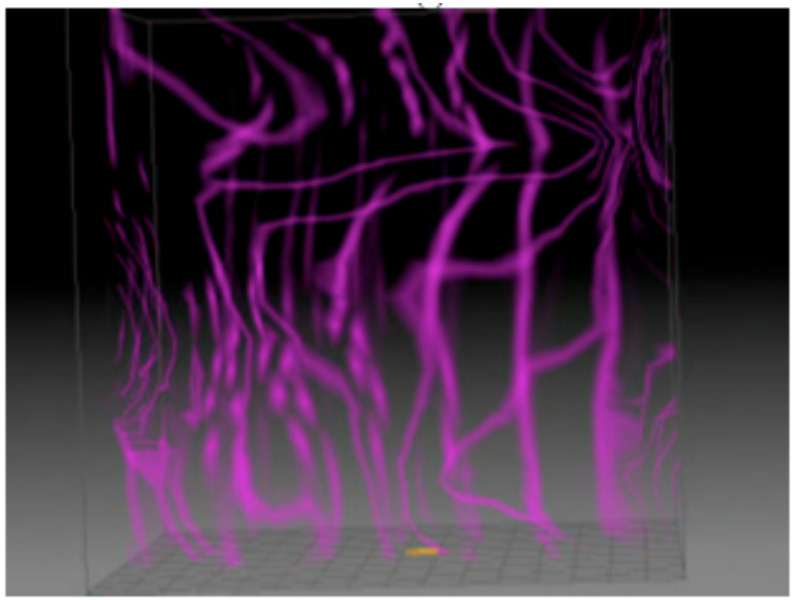
- Physics-based Modeling and Animation
- Character Animation
- Shape Deformation
- Rendering

2. October

Stam

Stable Fluids

SIGGRAPH 2001

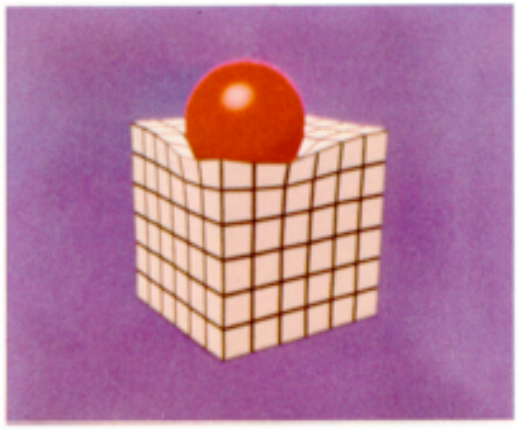


9. October

Terzopoulous, Platt, Barr, Fleischer

Elastically Deformable Models

SIGGRAPH 1987

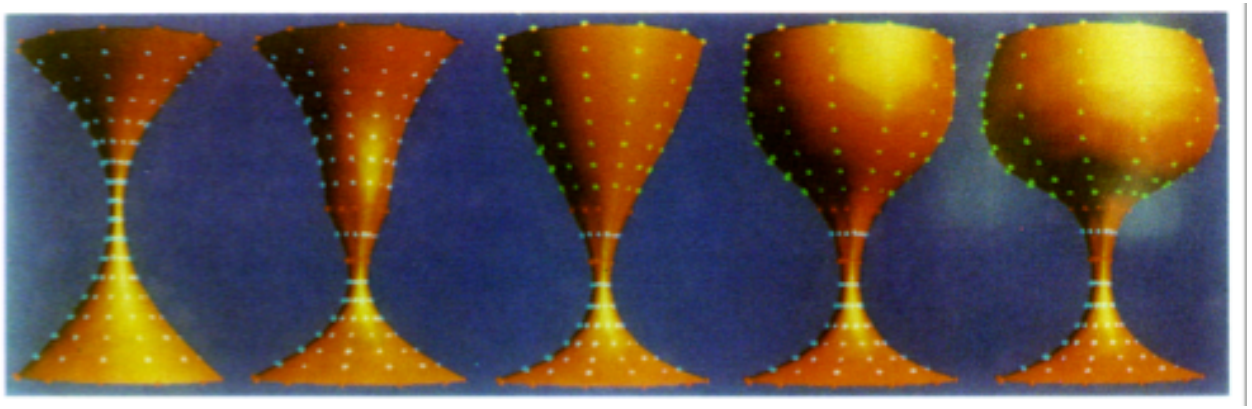


16. October

Celniker, Gossard

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

SIGGRAPH 1991

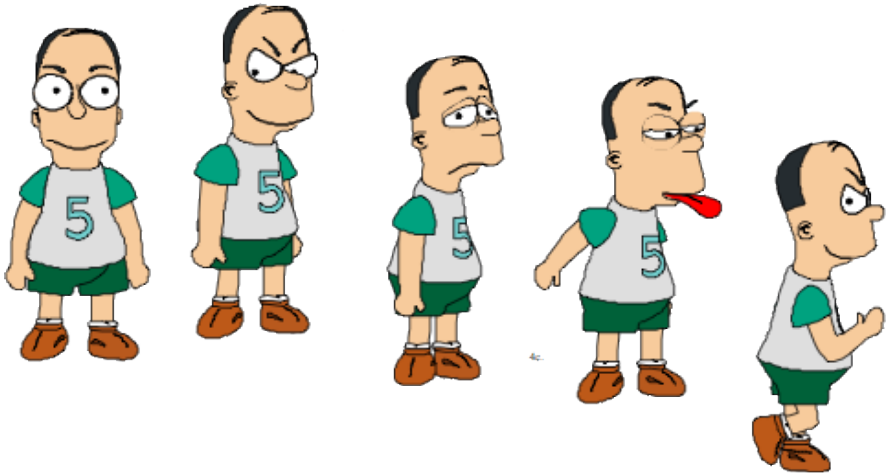


23. October

Ngo, Cutrell, Dana, Donald, Loeb, Zhu

Accessible Animation and Customizable Graphics via Simplicial Configuration Modeling

SIGGRAPH 2000

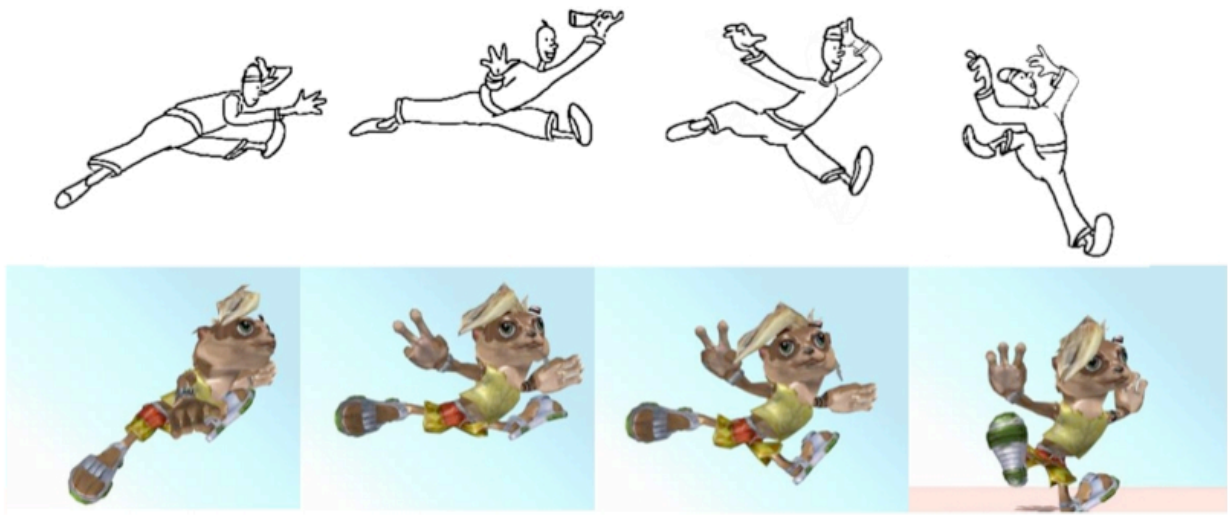


30. October

Bregler, Loeb, Chuang, Deshpande

Turning to the master: motion capturing cartoons

SIGGRAPH 2002

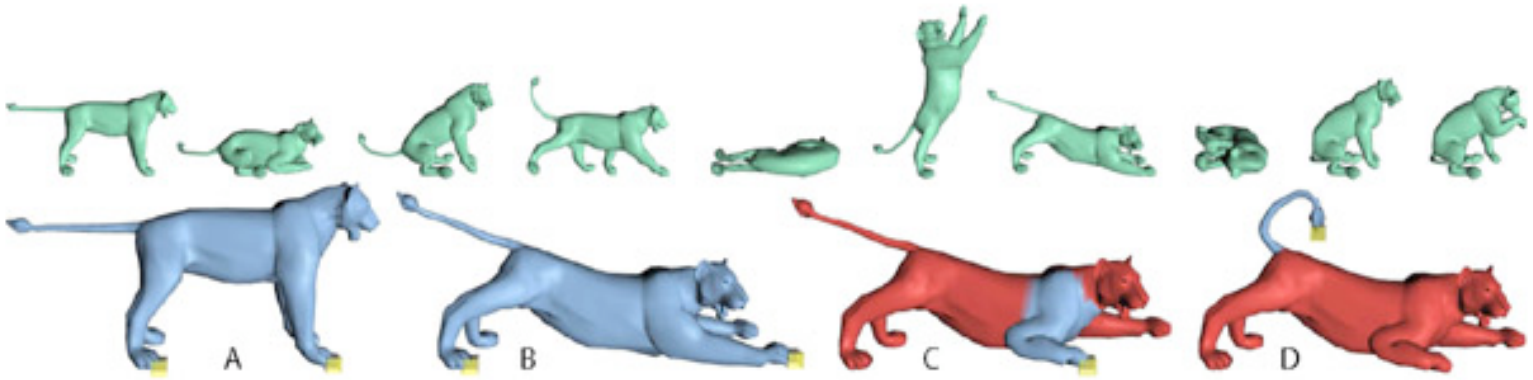


6. November

Sumner, Zwicker, Gotsman, Popovic

Mesh-Based Inverse Kinematics

SIGGRAPH 2005

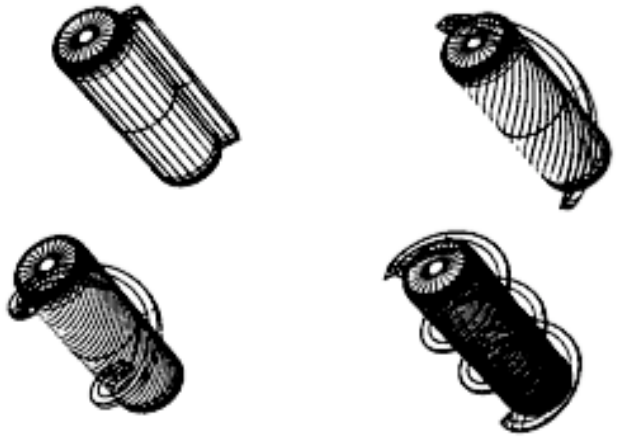


13. November

Barr

Global and local deformations of solid primitives

SIGGRAPH 1984

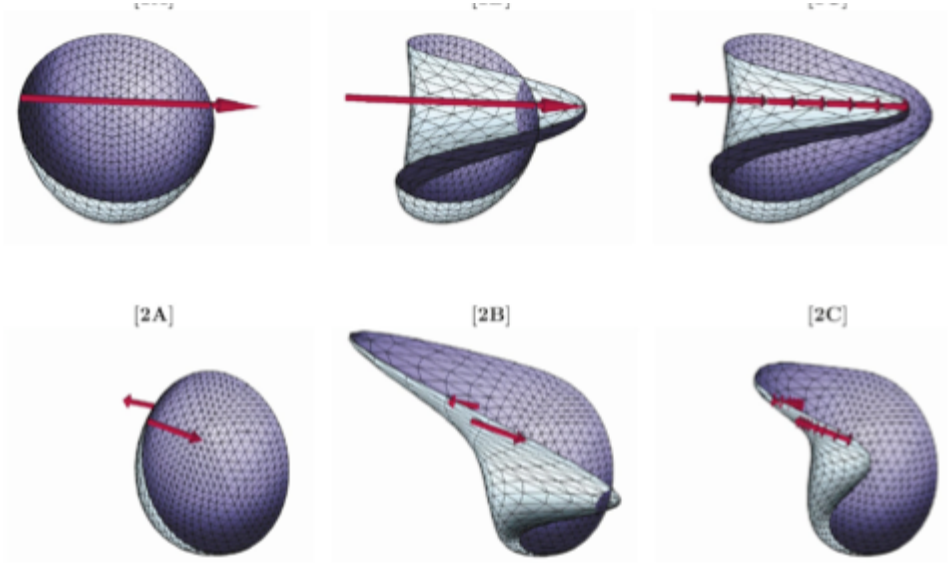


20. November

Gain, Dodgson

Preventing Self-Intersection under Free-Form Deformation

IEEE TVCG 2001

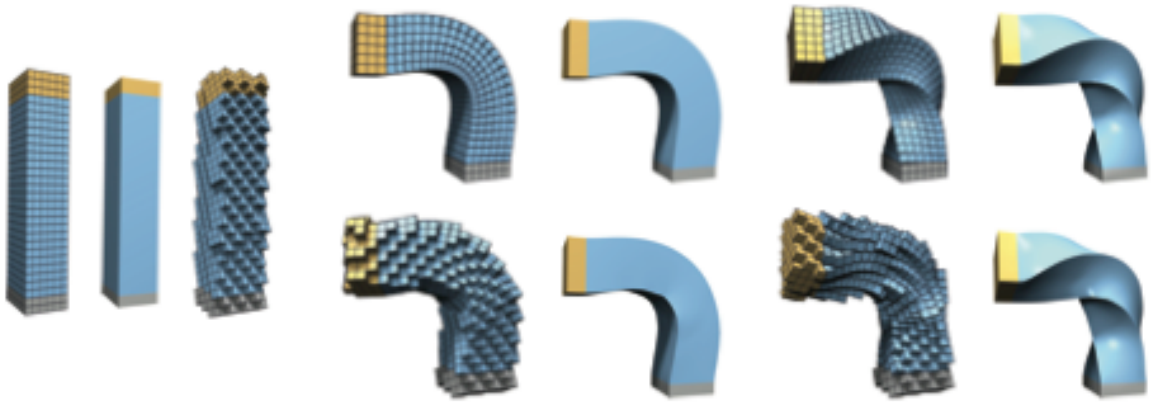


27. November

Botsch, Pauly, Wicke, Gross

Adaptive Space Deformations Based on Rigid Cells

Eurographics 2007

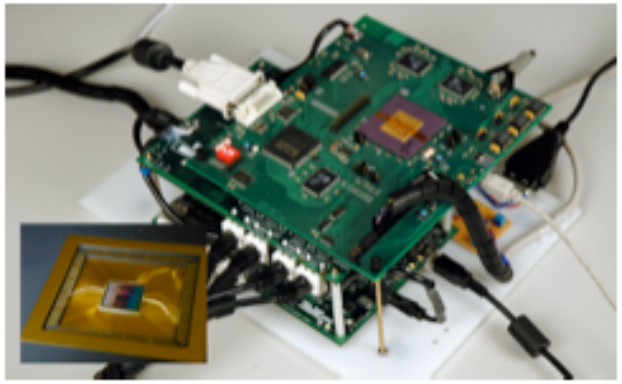


4. December

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

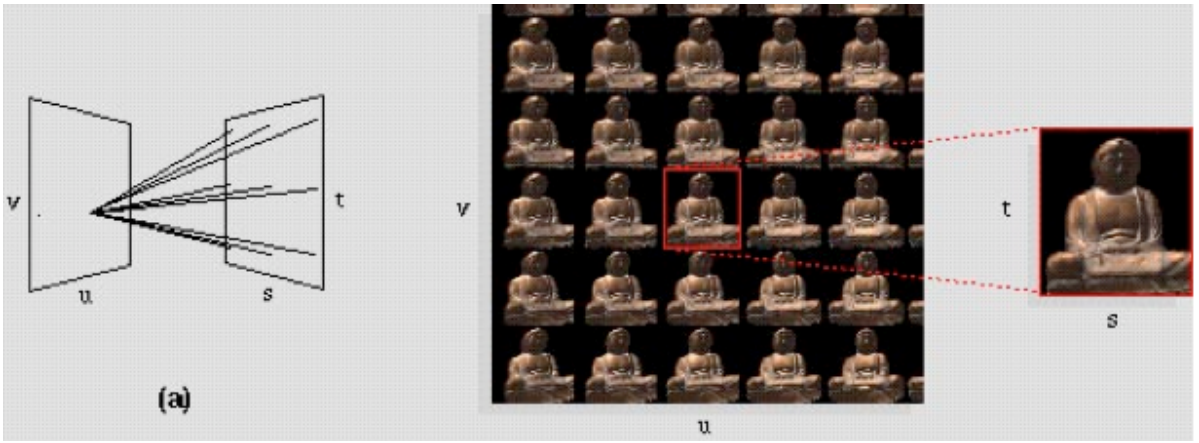
SIGGRAPH 1986

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/Scientifically_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

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

Some quotes

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

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

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