CPSC 689-609
Special Topics in Surface Deformation and Reconstruction

Dr. Scott Schaefer
Fall 2006
Course Structure

• Review/discuss recent papers in Geometric Modeling
  – Surface Deformation
  – Surface Reconstruction
  – Surface Parameterization

• No textbook!!!
  – All papers online
    http://faculty.cs.tamu.edu/schaefer/teaching/689_Fall2006
Required Work

• 30% Paper summaries
• 30% Presentations
• 30% Course project
• 10% Discussion
Paper Summaries (30%)

• Answers the following questions:
  – What is the contribution of the paper?
  – How did the authors accomplish this contribution?

• Similar to a paper abstract (short)

• Due at the beginning of class
• Don’t copy sentences out of the paper
• Spelling and grammar count!!!
Paper Presentations (30%)

- Become an expert on a paper and give a talk
- May use figures or even talks found online
- Practice giving a talk!
- If you have problems understanding a paper, come see me well before your talk
Course Project (30%)

• Pick one paper and implement the ideas
• Demonstrate working code to me
• Goal should be to impress (this is Graphics)

• No overlap among students
• Write your own code
Discussion (10%)

• Goal: understand the paper

• What problem does this paper solve?
• What is new about this paper?
• What could be better about the method?
• Can we improve upon their technique?
Course Policies

• Attendance: Mandatory
• Late Policy: No late work
• Exams: None!!!
Course Content: Deformation

- Types of deformation handles
- Desirable properties
- Volumetric Deformation
- Deformation intrinsic to the surface
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• Constructing implicit surface representations
  – Points, normals, polygons
• Extracting polygons from implicit representations
• Operations on implicits
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Course Content: Parameterization

• Flattening surface for texturing
  – Automatically, desirable properties
• Cross-shape parameterization
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• Flattening surface for texturing
  – Automatically, desirable properties

• Cross-shape parameterization
Papers

- Choose papers you want to present
- [http://faculty.cs.tamu.edu/schaefer/teaching/689_Fall2006](http://faculty.cs.tamu.edu/schaefer/teaching/689_Fall2006)

- I will give first talk and several others throughout the semester
- Check the course web page for the latest information