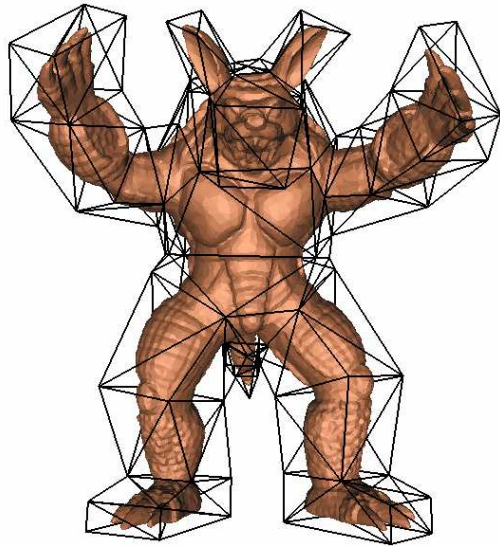
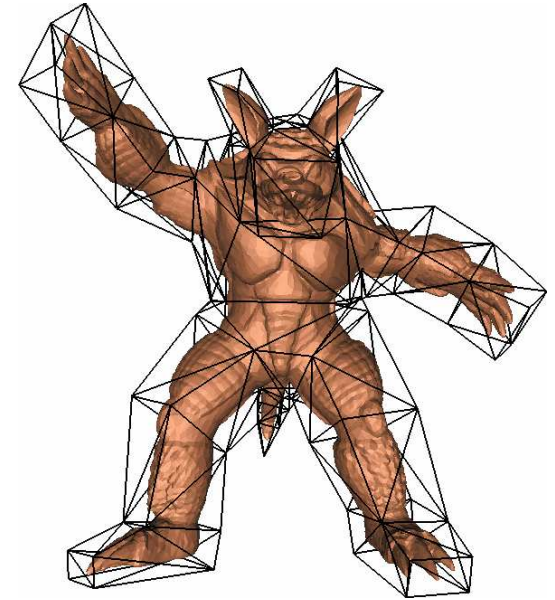


CPSC 689-609

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%)

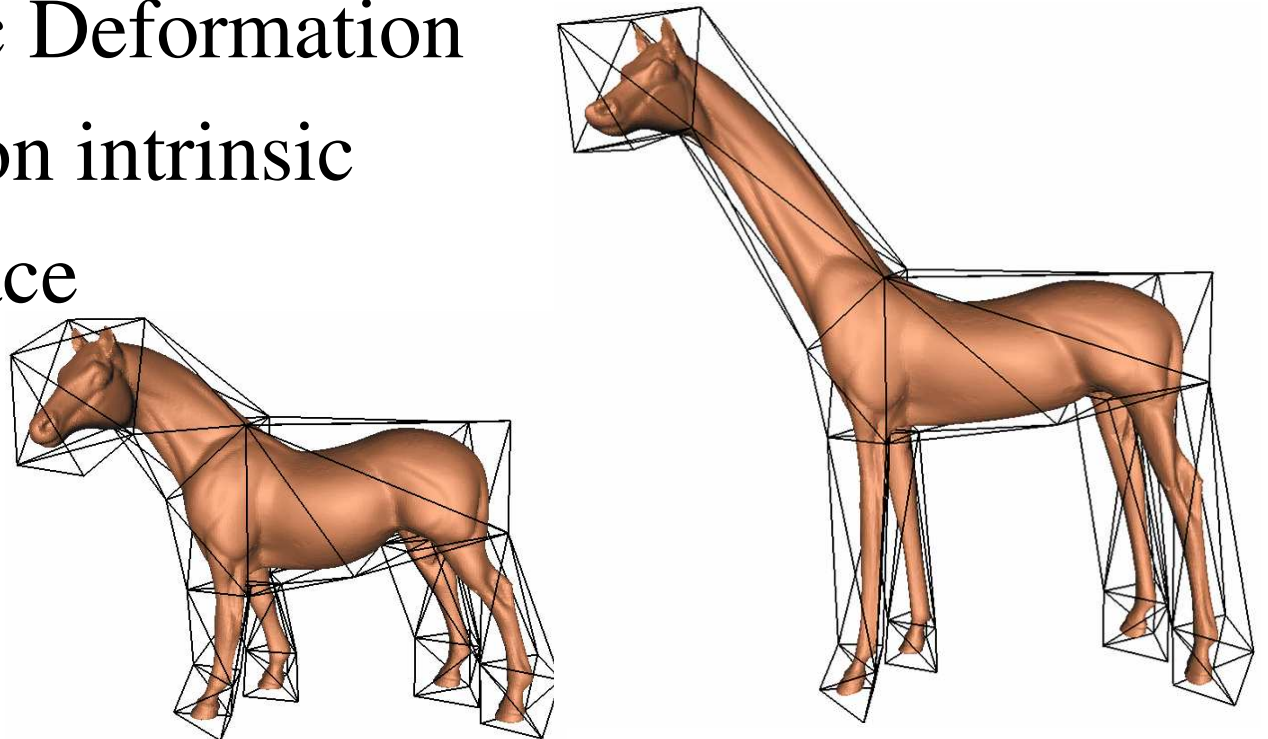
- Goal: understand the paper
- What problem does this paper solve?
- What is new about this paper?
- What could be better about the method?
- Can we improve upon their technique?

Course Policies

- Attendance: Mandatory
- Late Policy: No late work
- Exams: None!!!

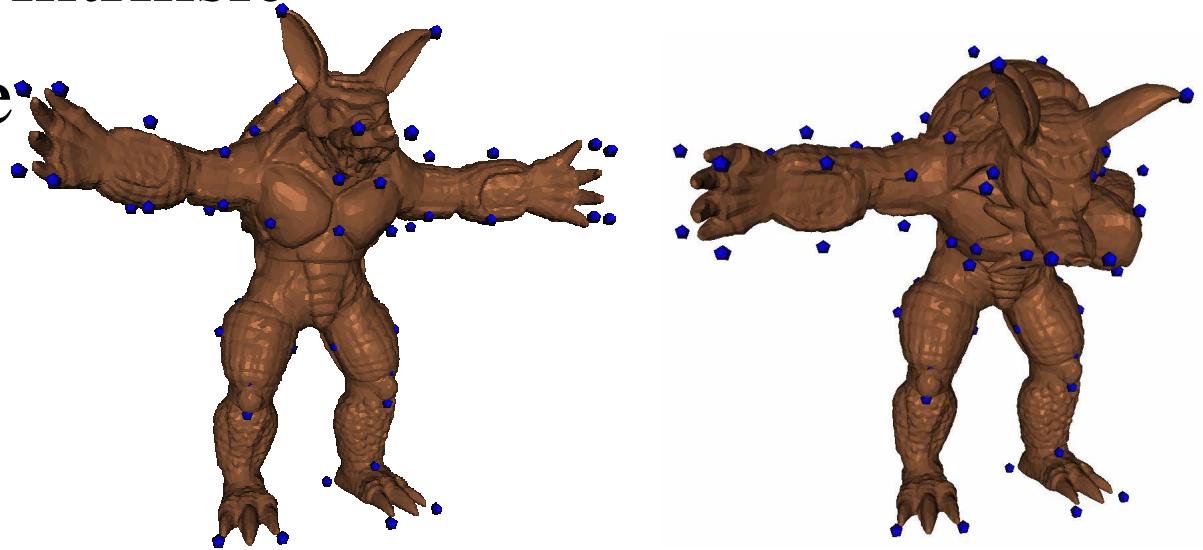
Course Content: Deformation

- Types of deformation handles
- Desirable properties
- Volumetric Deformation
- Deformation intrinsic to the surface



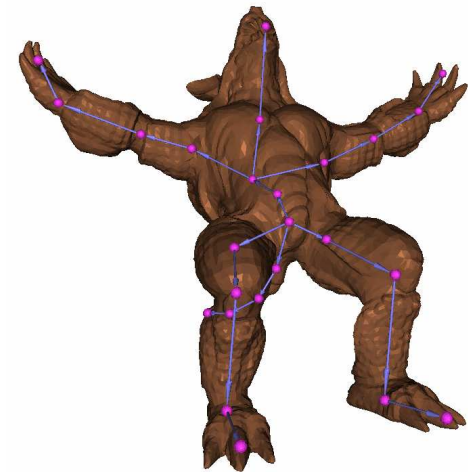
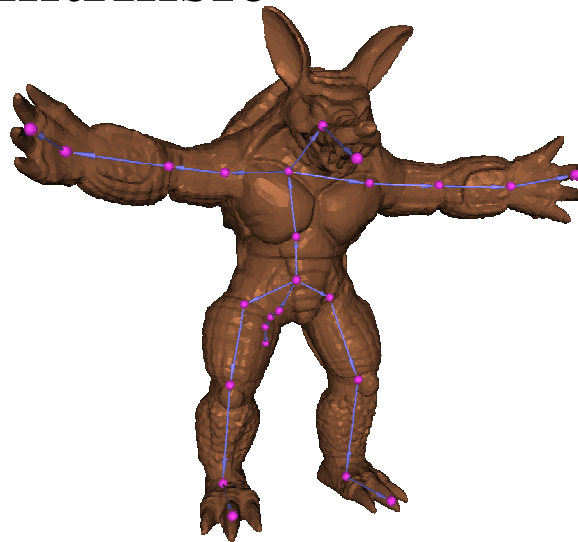
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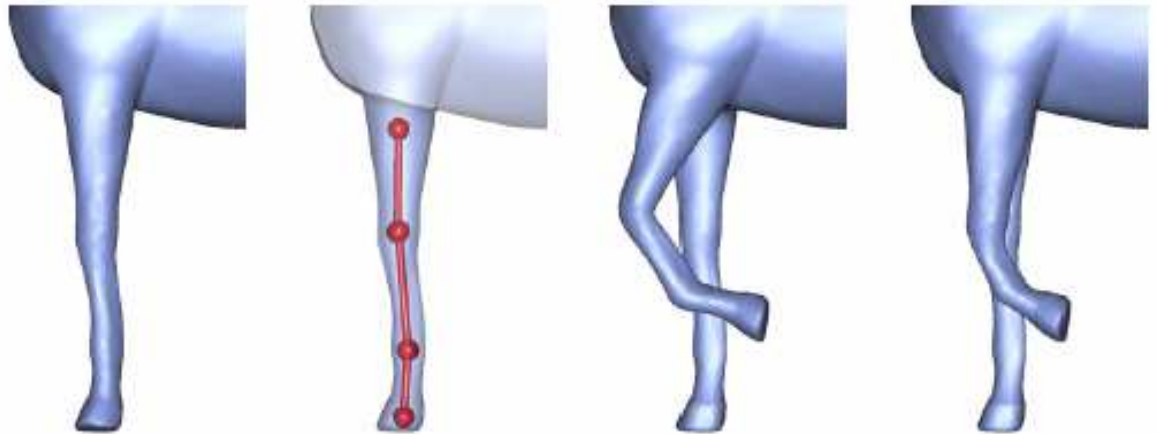
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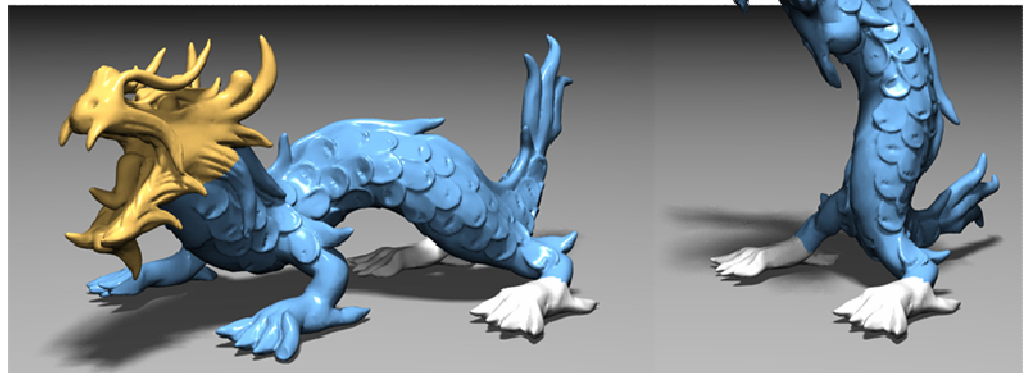
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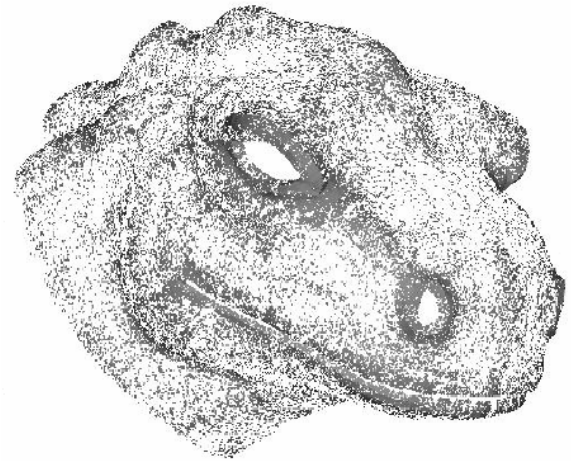
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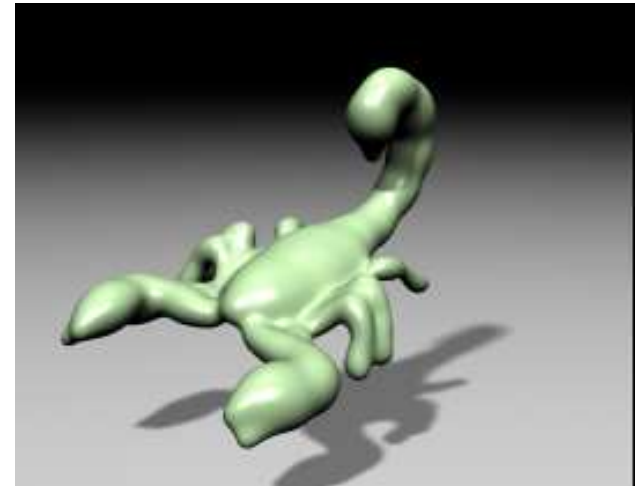
Course Content: Reconstruction

- Constructing implicit surface representations
 - Points, normals, polygons
- Extracting polygons from implicit representations
- Operations on implicits



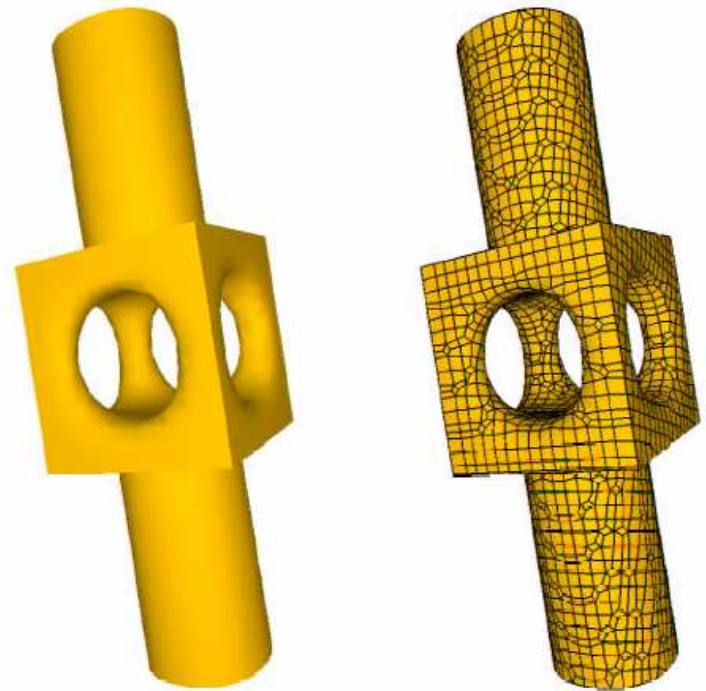
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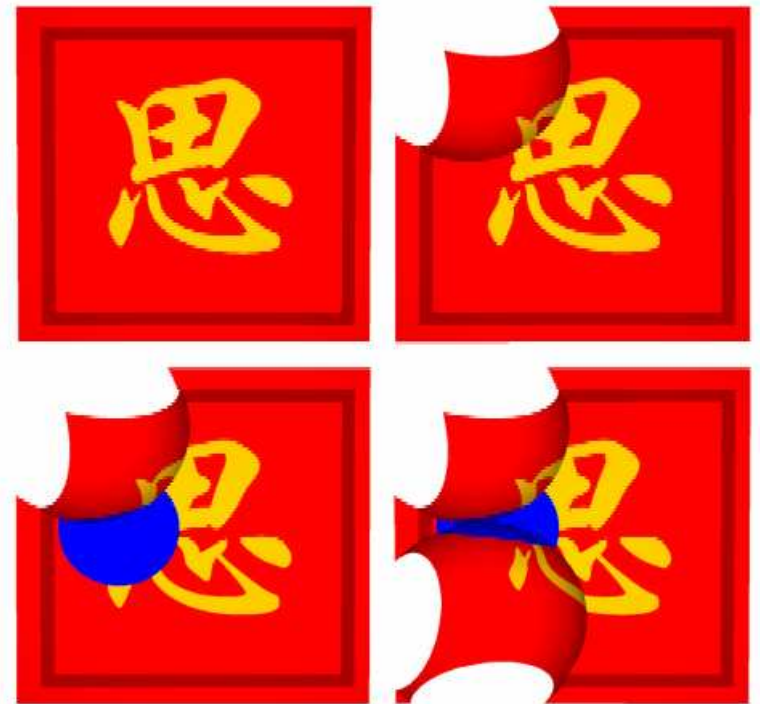
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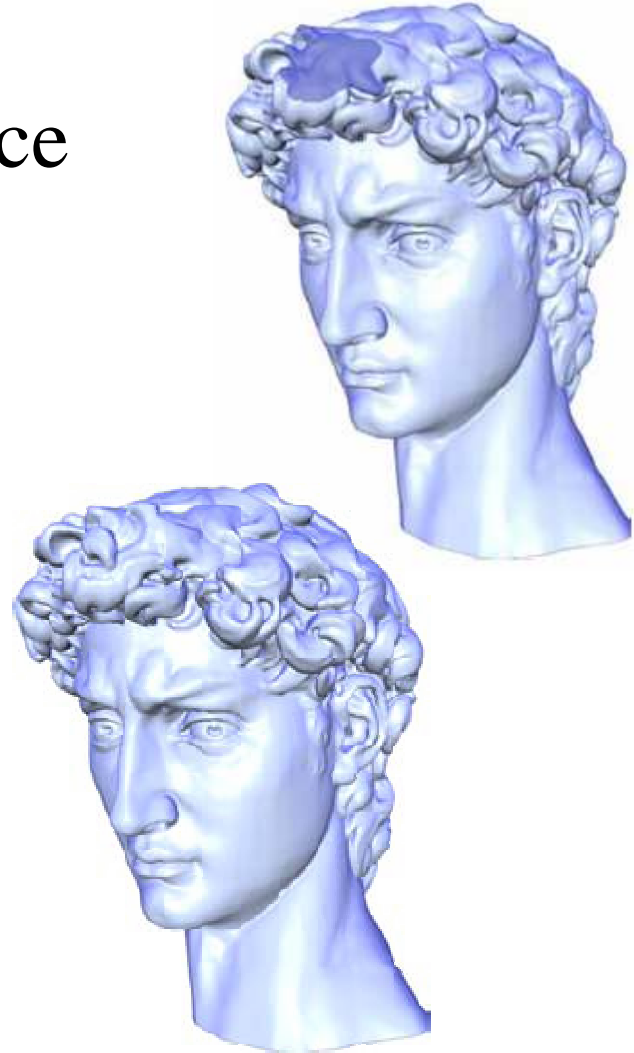
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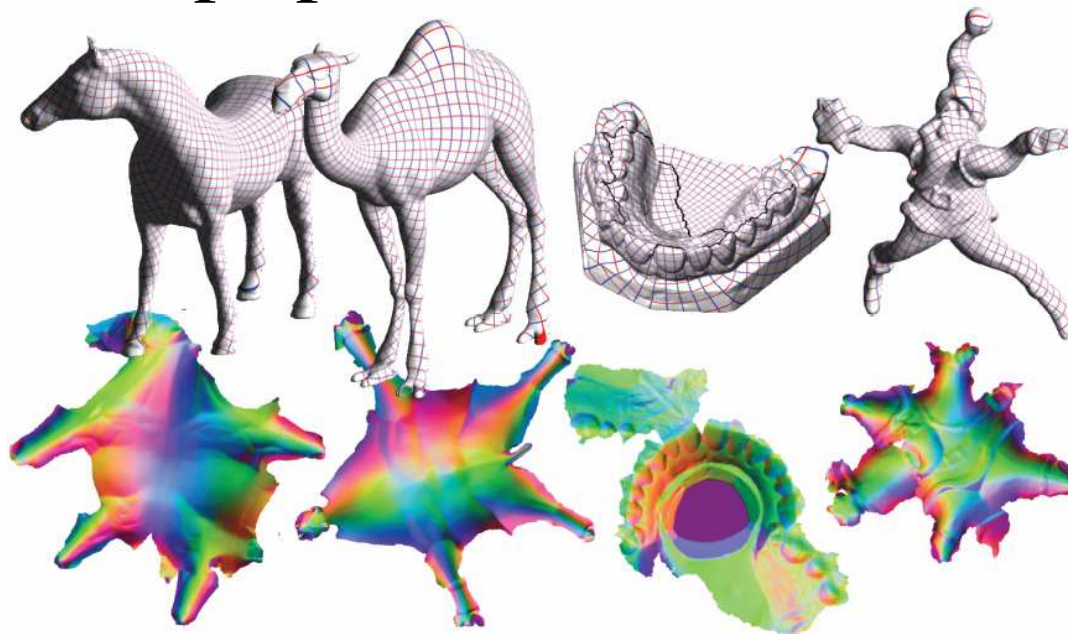
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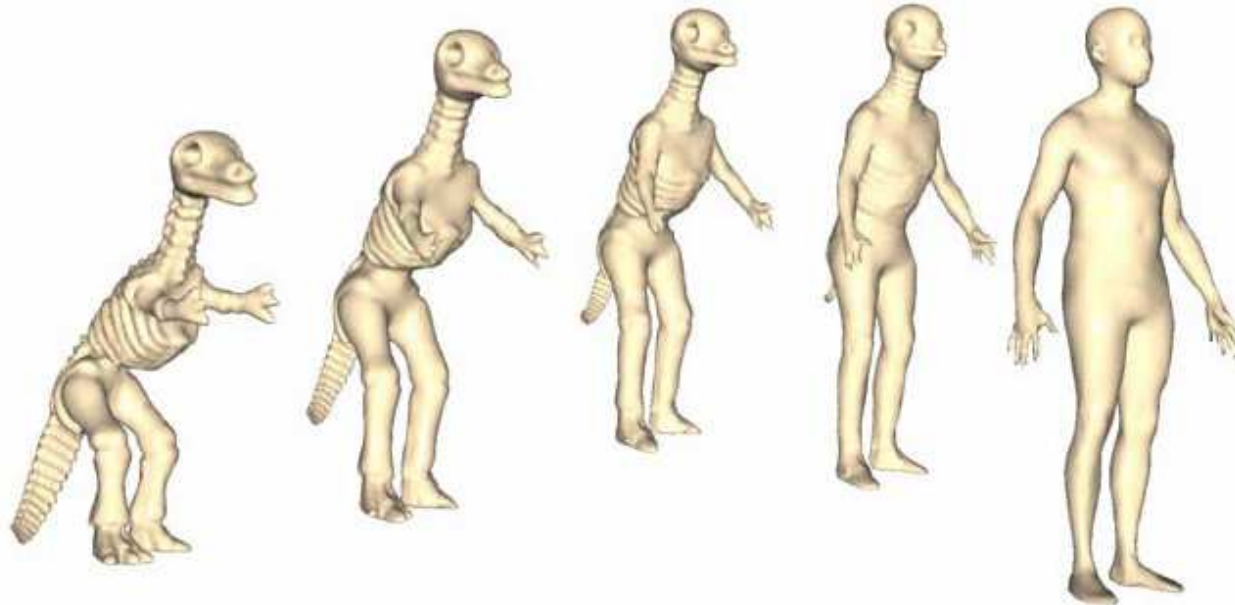
Course Content: Parameterization

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



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Papers

- Choose papers you want to present
- 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