Announcements

- Review on Thurs
- Project 4
  - due Wed night
  - no later than Friday night (with late days)

View Interpolation

Problem Statement
Input: two views of an unknown rigid scene
- from unknown viewpoints
Output: in-between views from a virtual camera

Morphed View
Virtual Camera
Image Morphing

Photograph  Morphed Image  Photograph

Linear Interpolation of 2D shape and color

Image Morphing for View Synthesis?

We want physically-correct view interpolations
• Can image morphing do this?

Goal: extend to handle changes in viewpoint
• Produce valid camera transitions

Not quite...

Morphing parallel views → new parallel views
• Linear image motion → linear camera motion
• Works because projection matrices have a special form

Special Case: Parallel Cameras

View Morphing in 3 Steps
View Morphing in 3 Steps

1. Prewarp
   - align views

2. Morph
   - move camera

3. Postwarp
   - point camera

Face Recognition

Corrected Photographs
Videos

- View morphing
- Blanz & Vetter (SIGGRAPH 99)
- MIT single view (SIGGRAPH 01)
- Yu inv-radiosity (SIGGRAPH 00)
- Debevec relight (SIGGRAPH 02)
- Video rewrite (SIGGRAPH 97)
- Vision-based pong (Seitz tape)
- Debevec IBMR in art & cinema tape
- Debevec face relighting demo