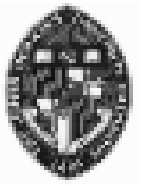
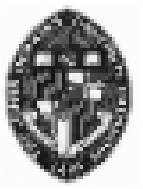


Computer Animation



What is it?

- Sequence of computer-generated images
- Objects, lights, and cameras may be moving and changing over time
- May be generated off-line (as opposed to real-time)

What is it used for?

- Fully computer-generated films (short or feature length)
  - entertainment
  - visualization of simulation data
- Special effects added to real camera footage

Common Approaches

Key frame animation

Physically-based simulation

Motion capture

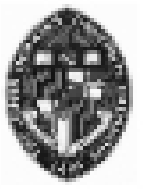
Key Frame Animation

Specify animation parameters at particular points in time

- Positions and orientations of objects, lights, and cameras
- Non-rigid-body modifications in object geometry
- Non-geometric parameters, such as color and intensity of lights, focus of cameras, etc.

Specify interpolation modes

- None, linear, higher-order splines, etc.



Hierarchical Specification

Hierarchical objects assigned parent/child relationships

- Child object parameters specified relative to parent
- Interpolations performed on these relative parameters rather than absolute

Often useful for articulated figures, such as humans or animals