

The Animation Process

3D Modeling



Parametric/polygonal/blobs/splines

- Parametric = POV-Ray (Persistence of Vision Raytracer)
 - Polygonal
 - CSG (union, subtraction, intersection)
 - Point, edge, face(t)
 - Subdivision smoothing
 - Metaballs (blobs)
 - Splines – NURBS, Bezier
-
-

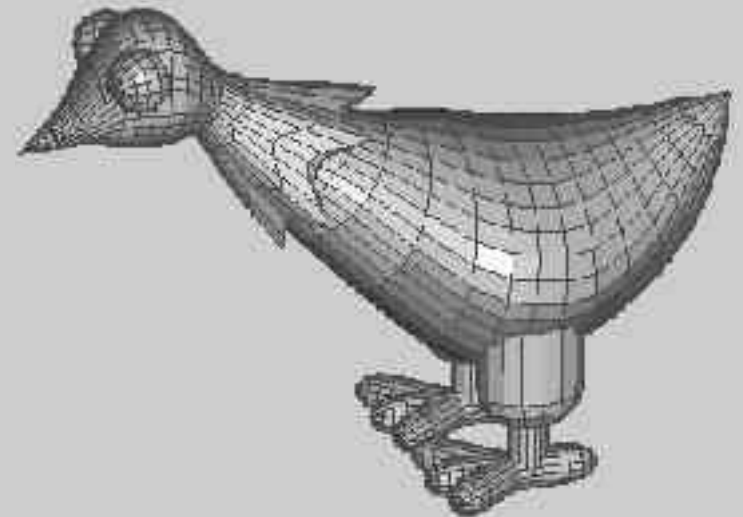
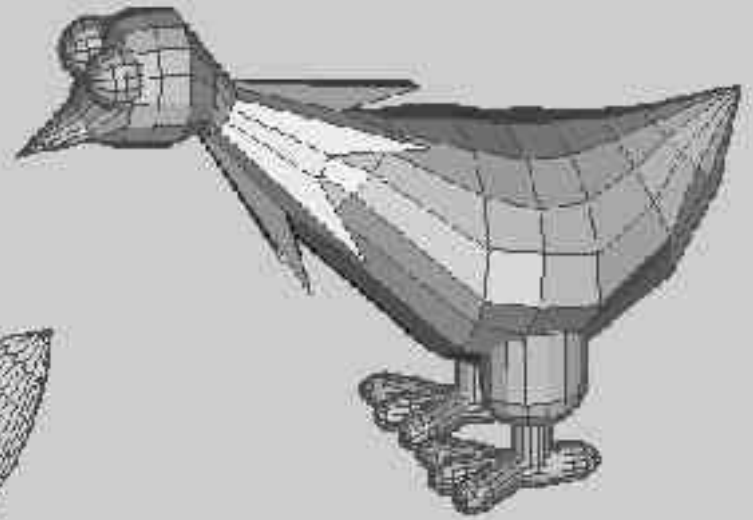
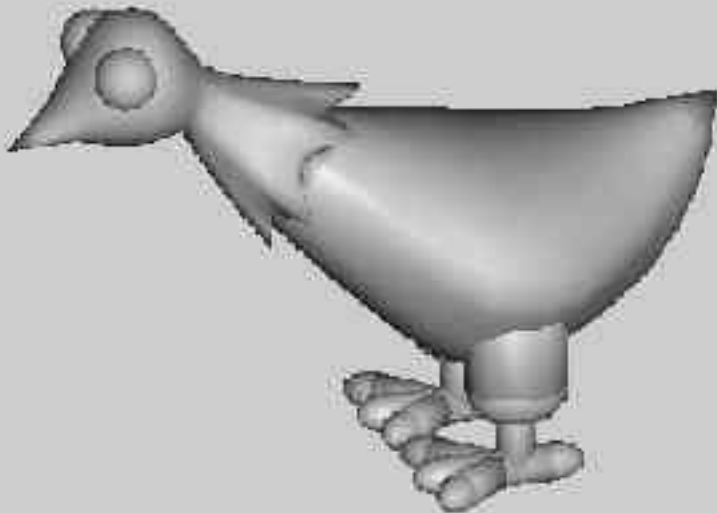
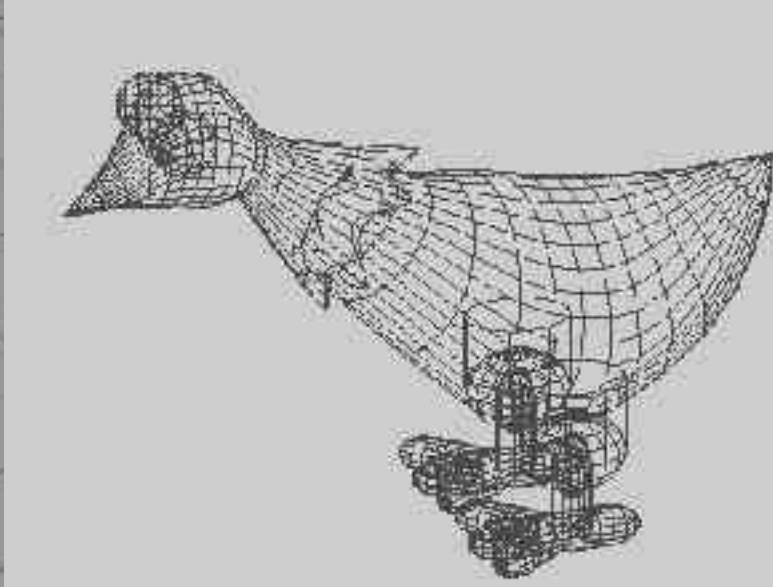
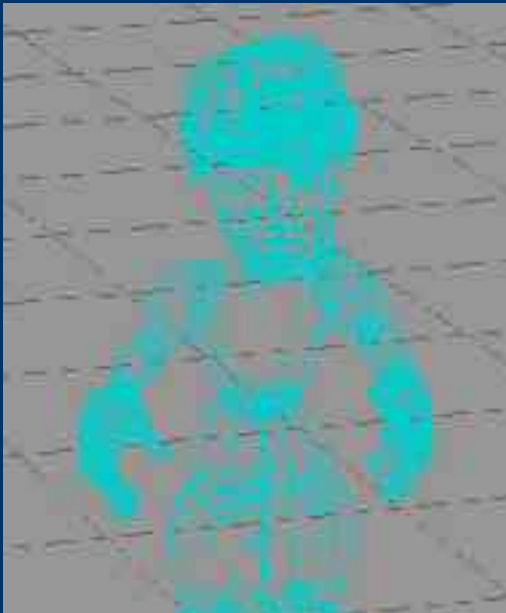
Parametric

- POV-Ray and similar
 - Use formulae rather than points, vertices, face(t)s
 - Advantages
 - Scale/zoom to any size (formulae are relative)
 - Arrays of objects a lot easier
 - Multiple transformations possible
 - Can be smaller file size for describing shapes
 - Disadvantages
 - “programming language” or limited GUI
 - Can be slower
 - Not so great for character animation
-
-

Polygonal

- Extremely common modeling style
 - Faceted shapes, like crystal sculptures
 - Smoothing
 - Can be turned into “cage” for “NURBS”
 - “subdivision smoothing”
 - Many modeling operations available
 - Reasonable for (non-extreme) character animation
 - File sizes can be quite large
 - Curves surfaces are approximated
 -
-
-

Polygonal examples



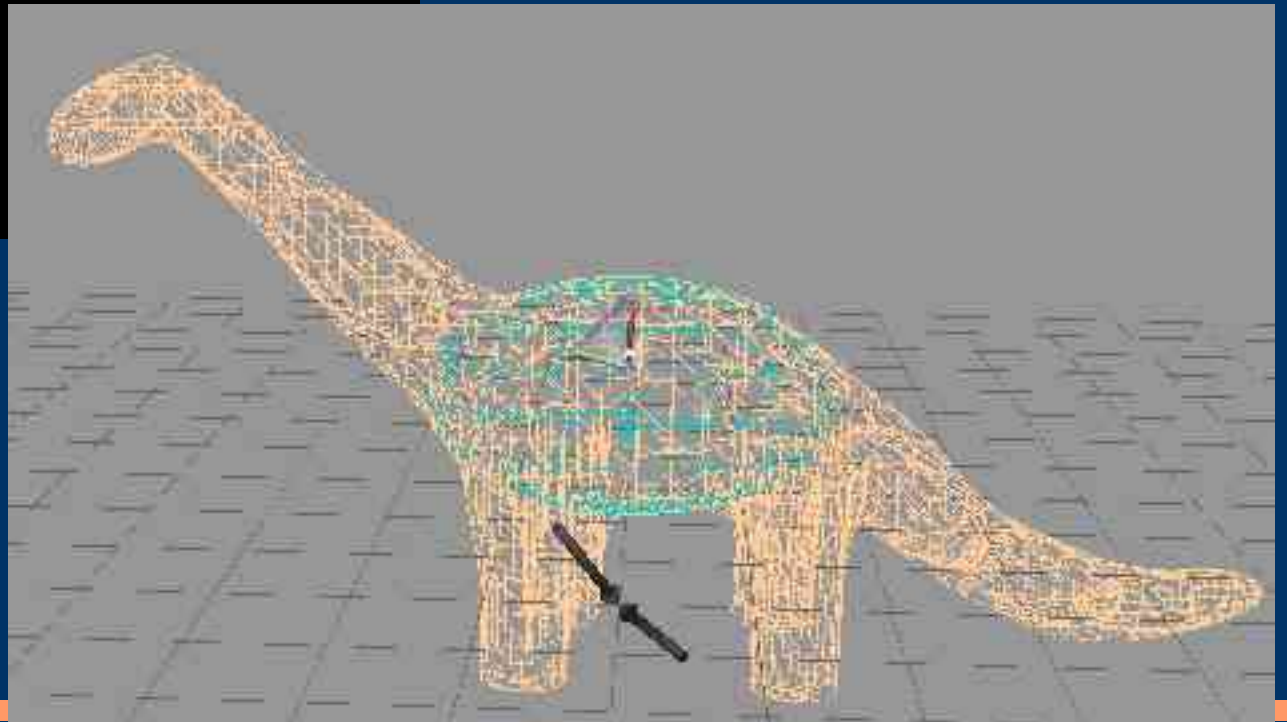
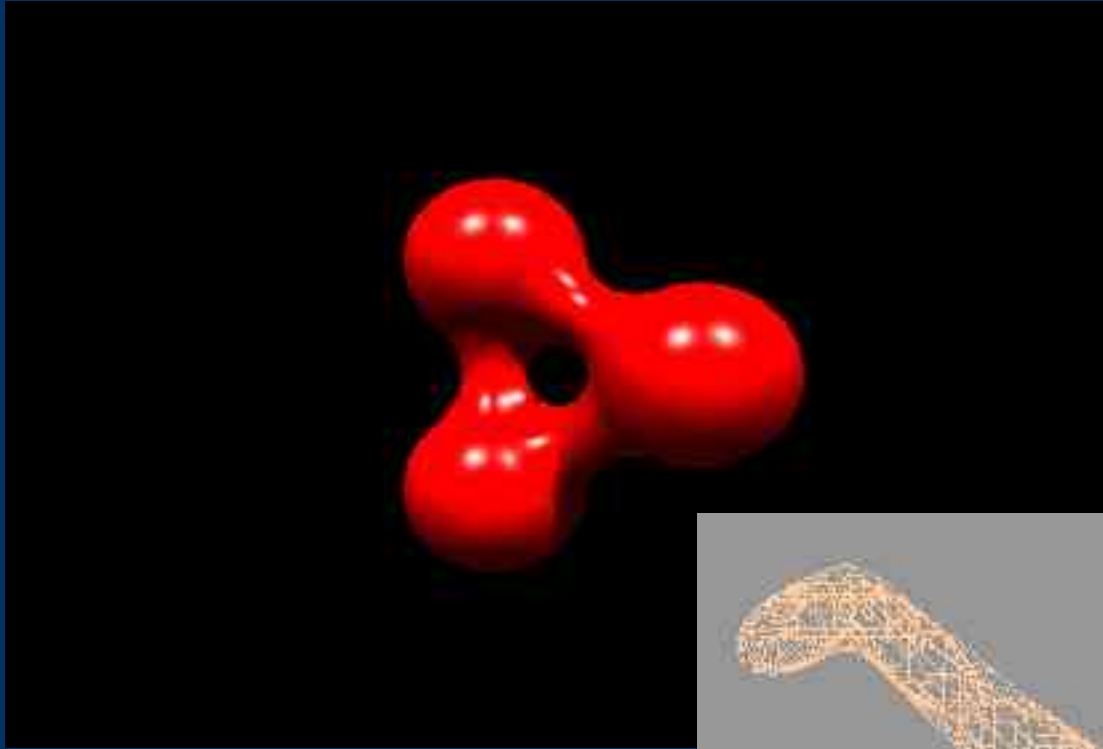
Metaballs (blobs)

- Cumulative “fields” of substance
- Spherical, cylindrical, other shapes
- Good for modeling inexact “organic” shapes

- Negative blobs used to “carve away” areas
- Less “fine detail” control
- Great for simulating fluids



Metaball example

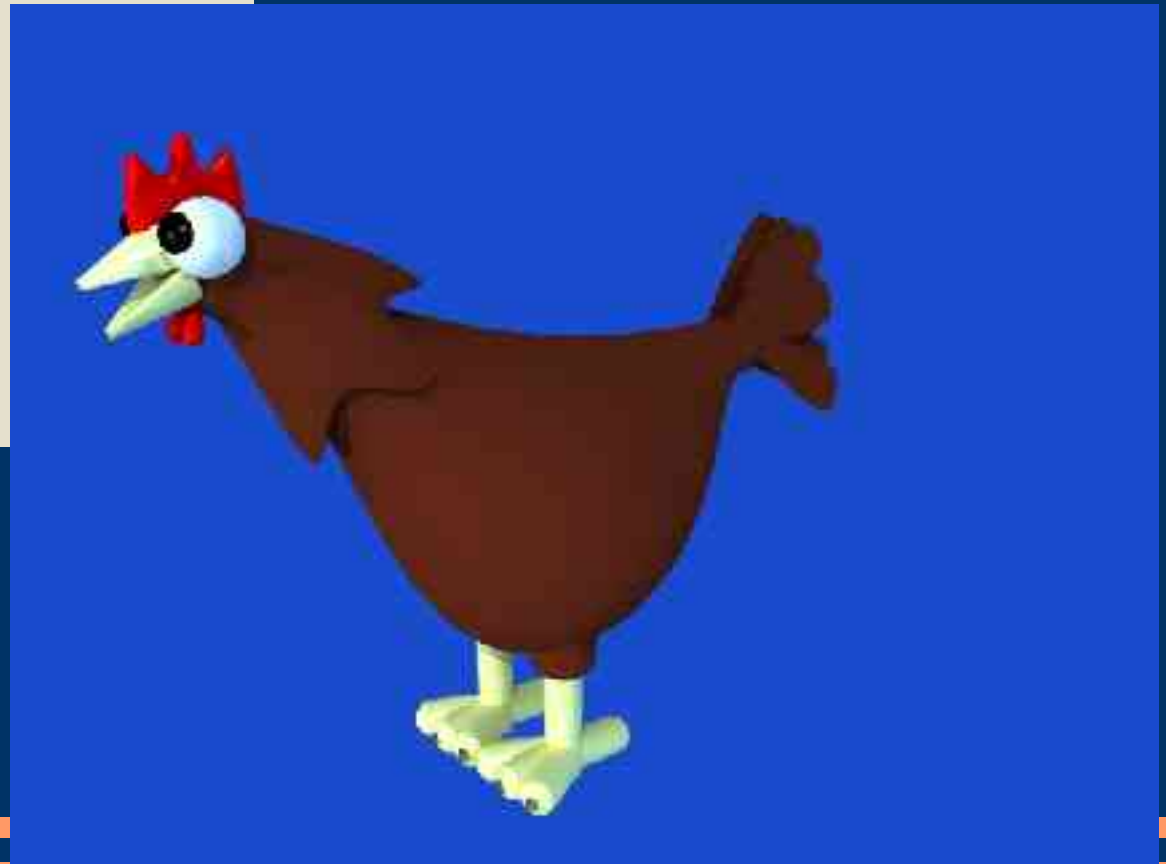
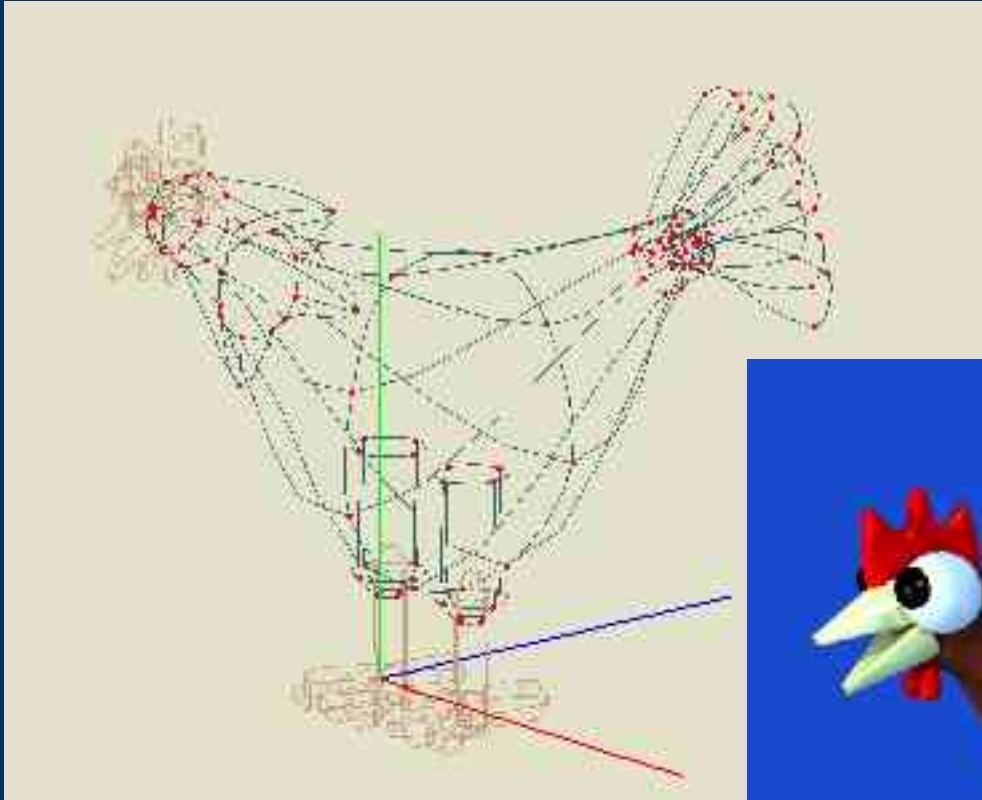


Splines

- Can be controlled with “control cage” or directly
- Good for organic shapes, with lots of control
- May need workarounds for creasing (+/-)
- Good for organic animation
- Relatively small file sizes
- Depending on algorithm, may break down into polygons at high zoom.



Spline example



The Animation Process

2D Drawing



Software variation

- Vectors and bitmaps
- Pens and brushes
- Scanned artwork
- Software implementation has influence on what/how you draw



2D Animation - frame-by-frame

- Labour-intensive
 - Used by large teams in a production-line work environment
 - Layout artists
 - Animators
 - In-betweeners
 - clean-up artists
 - Inkers
 - Colourists
 - cel/camera technicians
 - Pencil-test software
 - Ink&Paint tools
-
-

2D Animation – morphing style

- Computer does in-between frames, badly
 - Need to draw lots of keyframes
 - Arm-behind-body problems – multiple fills
 - Vector tools
 - Flash
 - ToonBoom
 - the TAB
 - Living Cels
 - KoolMoves
-
-

2D Animation – Marionette (puppet) cut-out style

- Separate pieces moving on pivot points
- Easy to animate but tends to be very stylistic/unrealistic
- Vector tools
 - Flash
 - Moho
 - Creatoon
 - KoolMoves
 - The TAB ?



2D Animation – combination of styles

- Bones (shape) + point morphing
- More setup work than cutout but more appeal ?
- Vector tools
 - Moho
 - Symphony
 - The TAB
 - Flash ?
 - KoolMoves

