Computer Graphics

Lecture 3: Modelling

Kartic Subr
What is a model?
What is a model?

use (a system, procedure, etc.) as an example to follow or imitate.
geometry

lighting

animation

materials

textures
Search videos showing ‘effects breakdown’

https://www.youtube.com/watch?v=pTffQIFFYR8
Approaches to modelling

Artistic creation

maths

measurement
Approaches to modelling

Artistic creation

- Use physics
- Repeated procedure
- Analytical shapes (sphere)

maths

measurement

- 3D scan
- Photograph
- Motion capture
manually created models

artistic expression
measurement
mathematical models
3D shape representations

- Implicit representation
- Explicit representations
  - primitives
  - parametric
3D modelling – common approaches

constructive solid geometry
https://www.cs.cmu.edu/~sco
ros/cs15869-s15/lectures/05-
CSG_Procedural.pdf

parametric surfaces
http://www.inf.ed.ac.uk/tea
ching/courses/cg/lectures/sl
ides16.pdf

procedural modelling
https://www.cs.princeton.edu/
courses/archive/spring03/cs4
26/lectures/16-procedural.pdf
Materials – common approaches

- measured
- parametric e.g. ggx, bssrdf
- procedural modelling

more about this, later in the course …
Lighting