

# **Audiovisual Art in VR Workshop**

Virtual Worlds Symposium

East Gallery, Norwich University of Arts

November 23, 2016

**Instructor:**

Lance Putnam

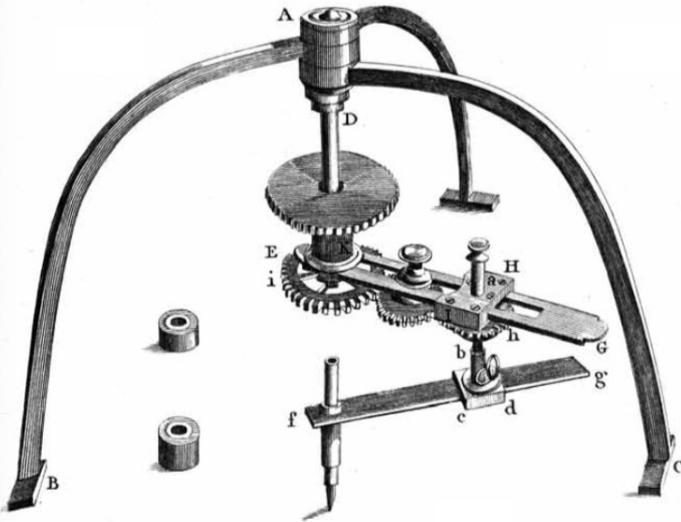
Goldsmiths and DC Labs, University of London

([l.putnam@gold.ac.uk](mailto:l.putnam@gold.ac.uk))

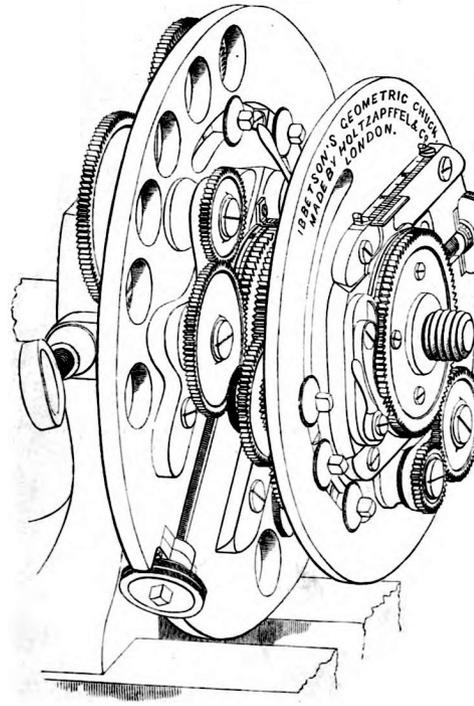
# Outline of Workshop

- Background on curve-based synthesis (10 min)
- Software installation and demonstration (10 min)
- “Creature Synth” work session (20 min)
- Experience creations in Mutator VR (20 min)

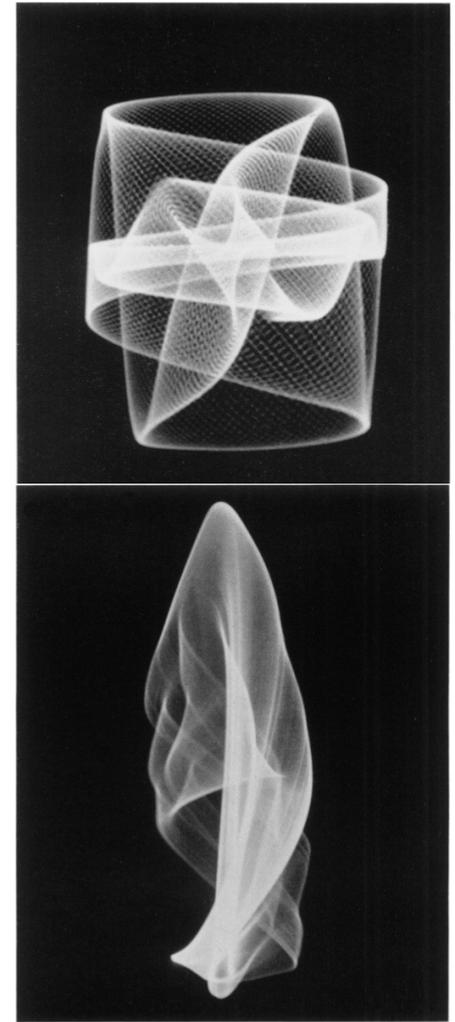
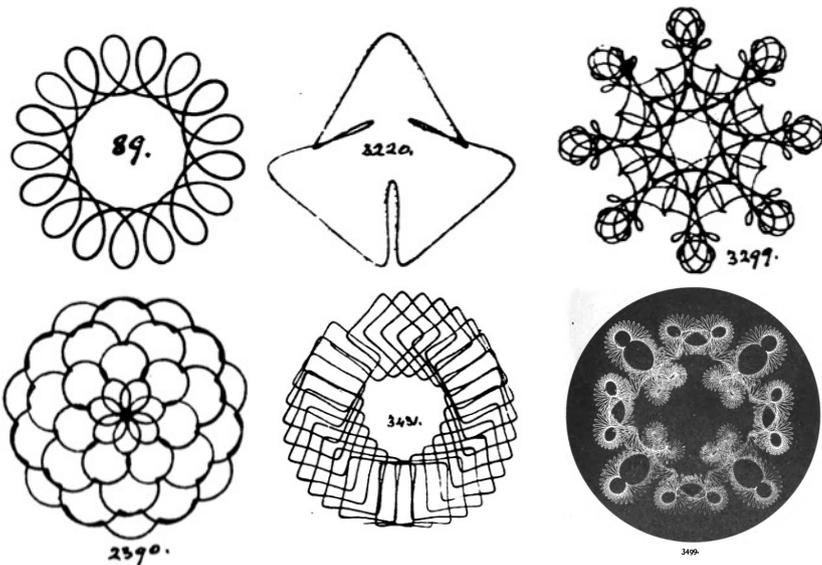
# Curve-based Synthesis



Geometric Pen (Suardi, 1750)

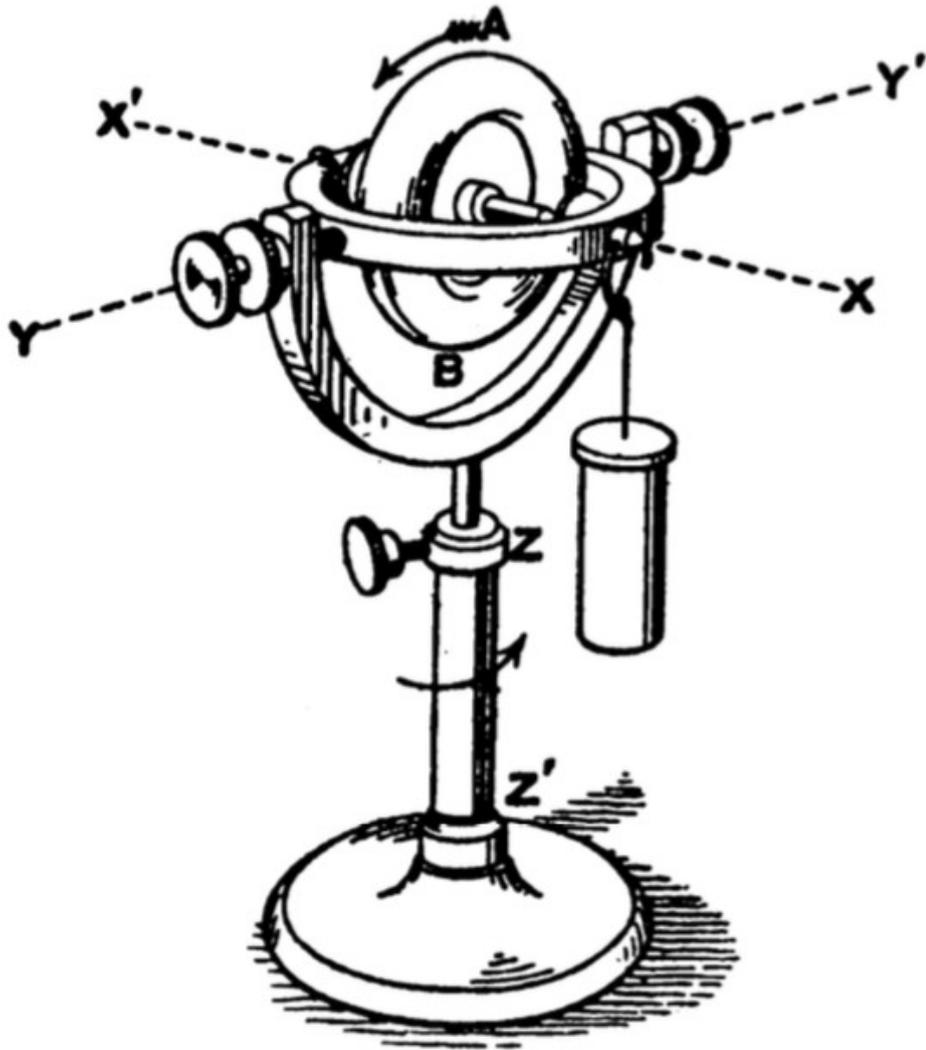


Geometric Chuck (Ibbetson, 1800s)  
(Bazley, 1875)

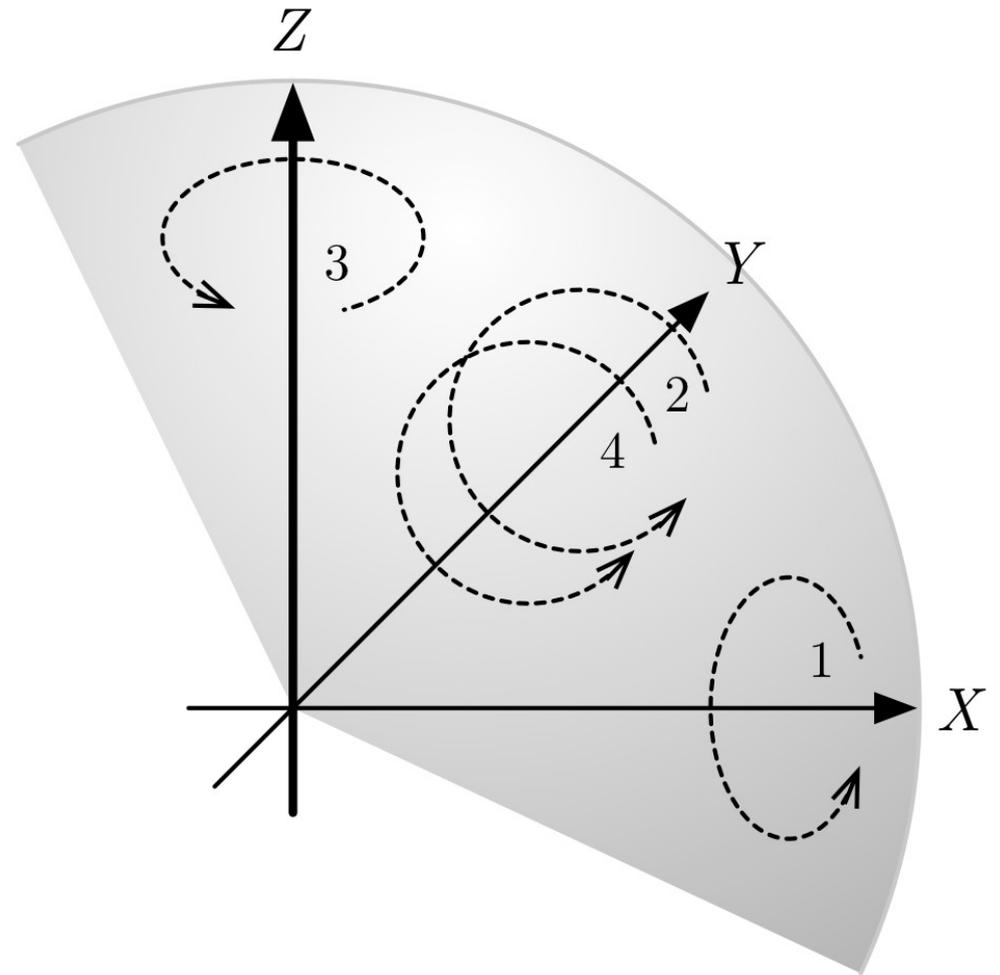


Oscillons (Laposky, 1953)

# Curve-based Synthesis

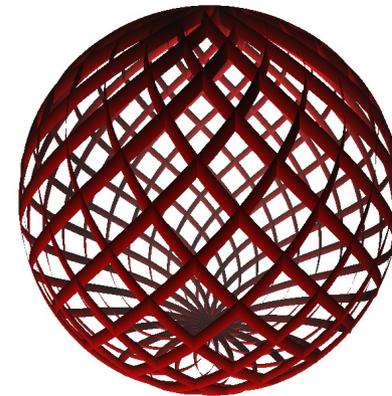


Gyroscope

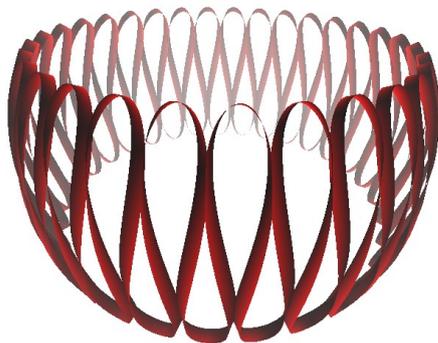


Euler Rotations

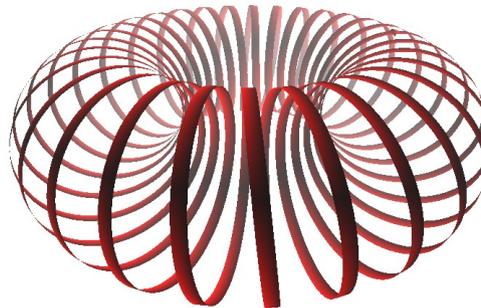
# Curve-based Synthesis



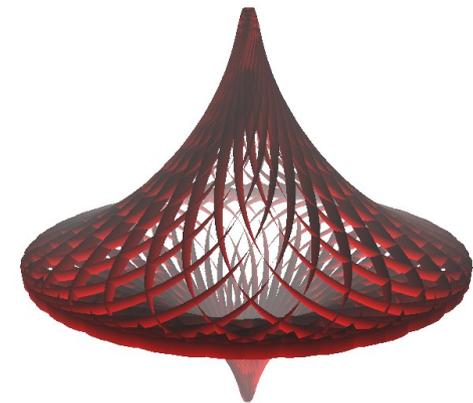
Cleliés curve



Satellite curve



Toroidal Sinusoid



Surface of revolution

Putnam, L. (2014). A method of timbre-shape synthesis based on summation of spherical curves. In *Proceedings of the 2014 International Computer Music Conference*, pages 1332–1337, Athens, Greece.

# Curve-based (Audio) Synthesis



**Tone**



**Portato**  
(amplitude modulation)



**Chirp**  
(frequency modulation)

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