

MECE 4606 DIGITAL MANUFACTURING

Lampshade Lattice

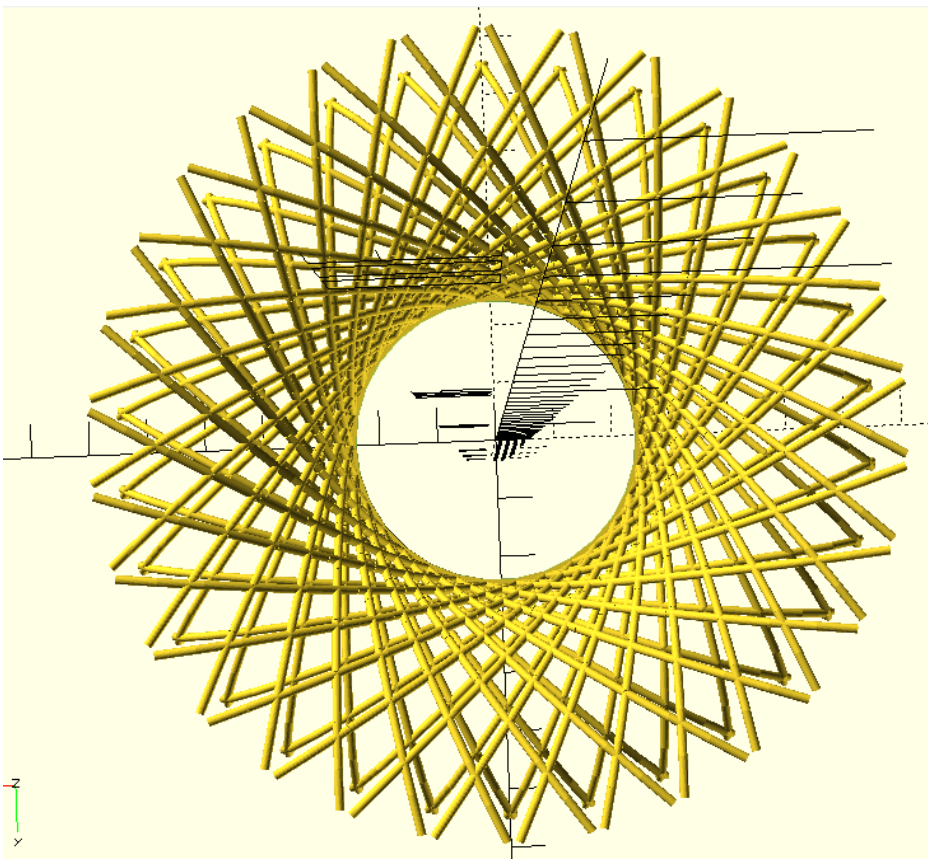
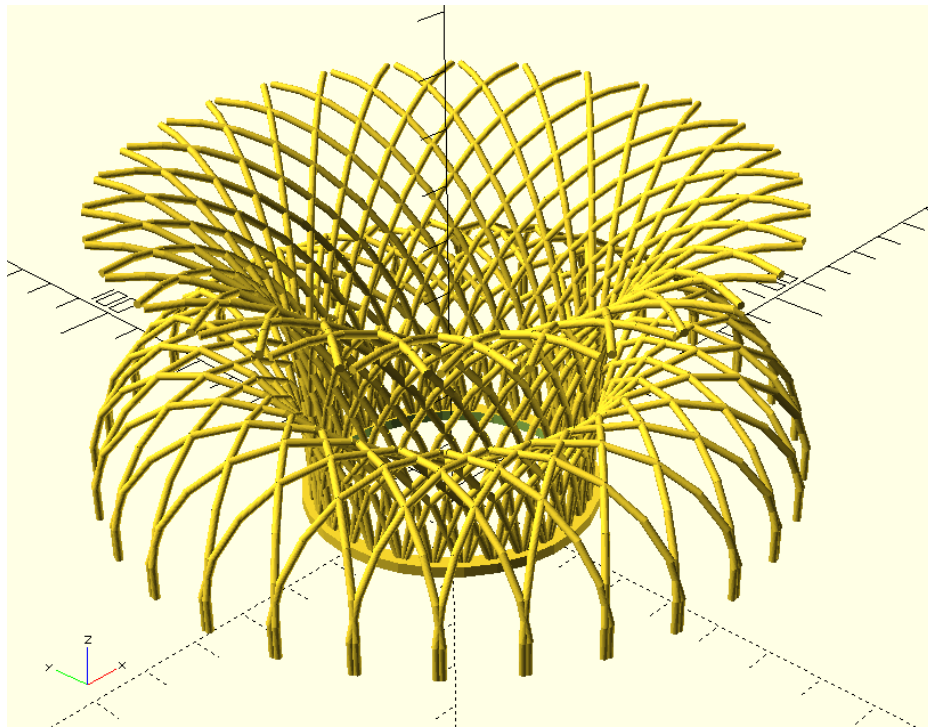
Rohan Sahu (rzs2120), Brock Taylor (btt2115)

February 27th: 10 PM

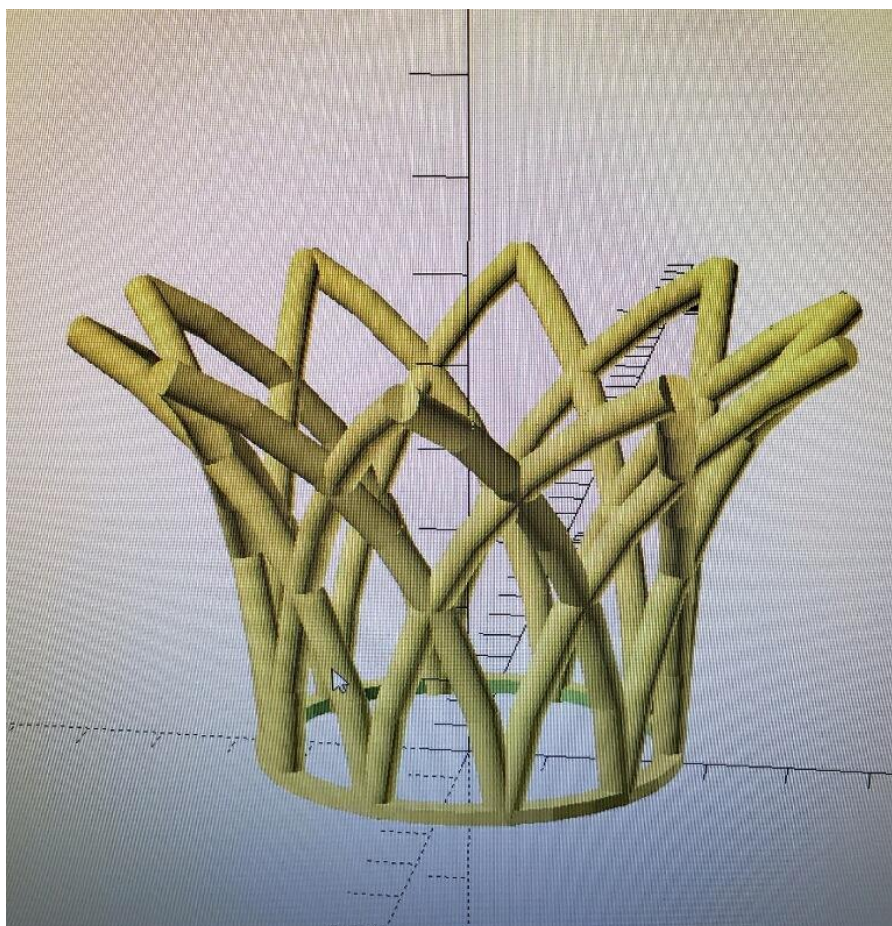
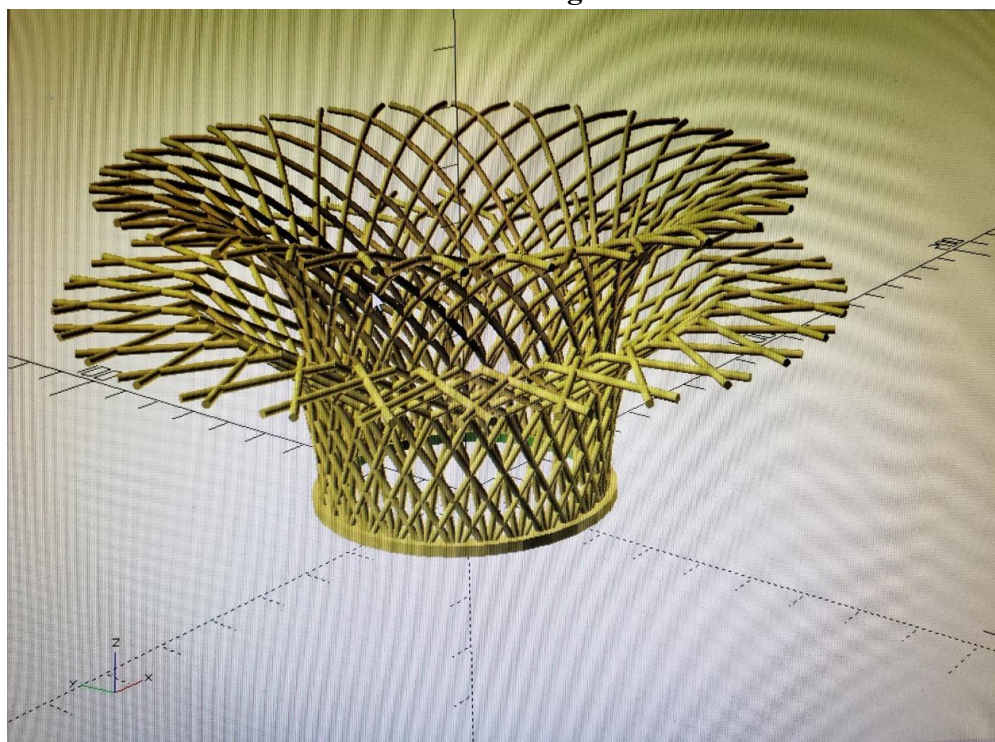
120 Grace Hours Before Submission, +2 Hours Gained, 122 Hours After Submission



I. Design : CAD Rendering



Variant Designs

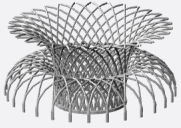


II. Algorithm Description

The algorithm works by calling various methods to construct different elements of the lampshade. It begins by creating a ring of inner radius, outer radius and height. It then calls a method that builds two ‘flowers’ which creates a lattice pattern with branches at a specified angle, branching in both the positive and negative direction of the angle. These branches recursively call themselves to a specified depth, which can be altered in order to produce different/alternative designs. Further description can be found in the code appendix at the end of the document.

III. Upload to Shapeways

SHAPEWAYS



X 125.84 Y 126.42 Z 59.45 MM RESIZE

Model Volume	13.58 cm ³
Machine Space	335.49 cm ³
Support Structure	199.77 cm ³
Parts Bounds Volume	945.58 cm ³
Part Count	1

Bring your product to life

Test [TOOLS](#)

Multi Jet Fusion Plastic [CHANGE](#)

[CHAT WITH US](#)

Choose Options

COLOR

Black
+\$2.50

Gray

Dark Gray
+\$8.53

MATERIALS / FINISHES

PA 12
Nylon 12 material with a matte finish and slightly grainy feel.

PA 12 Glass Beads
40% glass bead filled nylon 12 material with high stiffness and dimensional stability
+\$5.37

[ADD TO CART](#) QTY 1 • \$82.24

IV. 3-D Physical Print Out



10. 30pts 3D Printed lampshade
11. 10pts Glamour photo of printed lampshade with light, in dark
12. 10pt lampshade rendering posted on Ed at least 24h day before the deadline (show screenshot):

Lampshade - Brock Taylor & Rohan Sahu #204



Brock Taylor
19 hours ago in [General](#)

★
STAR

👁
WATCH

44
VIEWS

