



SIMULIERTE ZELLSTAPELUNG
AM BEISPIEL
SCUTOID

HUNG GIAP, LEIS ABDAL AL, LUKAS ENGELÄNDER

Wahnsinnsgliederung

Motivation

Definition

Simulation 2D

> Demo 2D

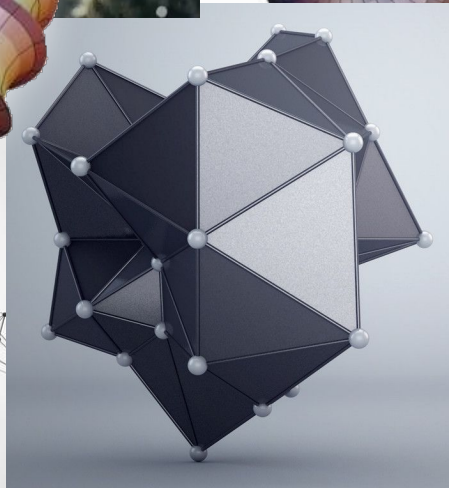
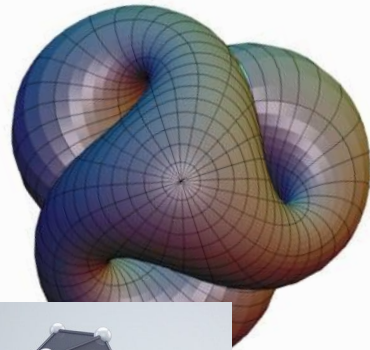
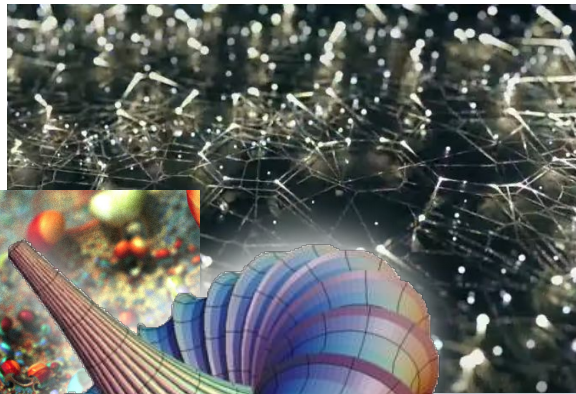
Simulation 3D

> Demo 3D

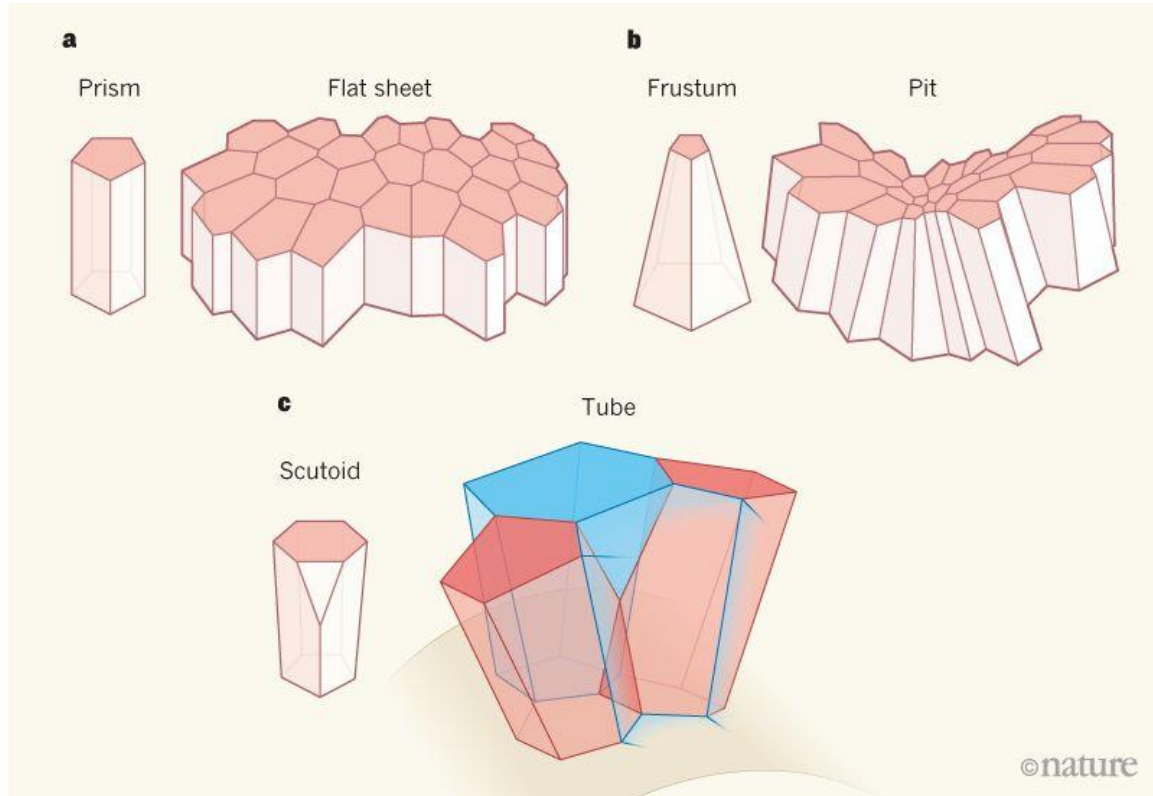
Ende

MOTIVATION

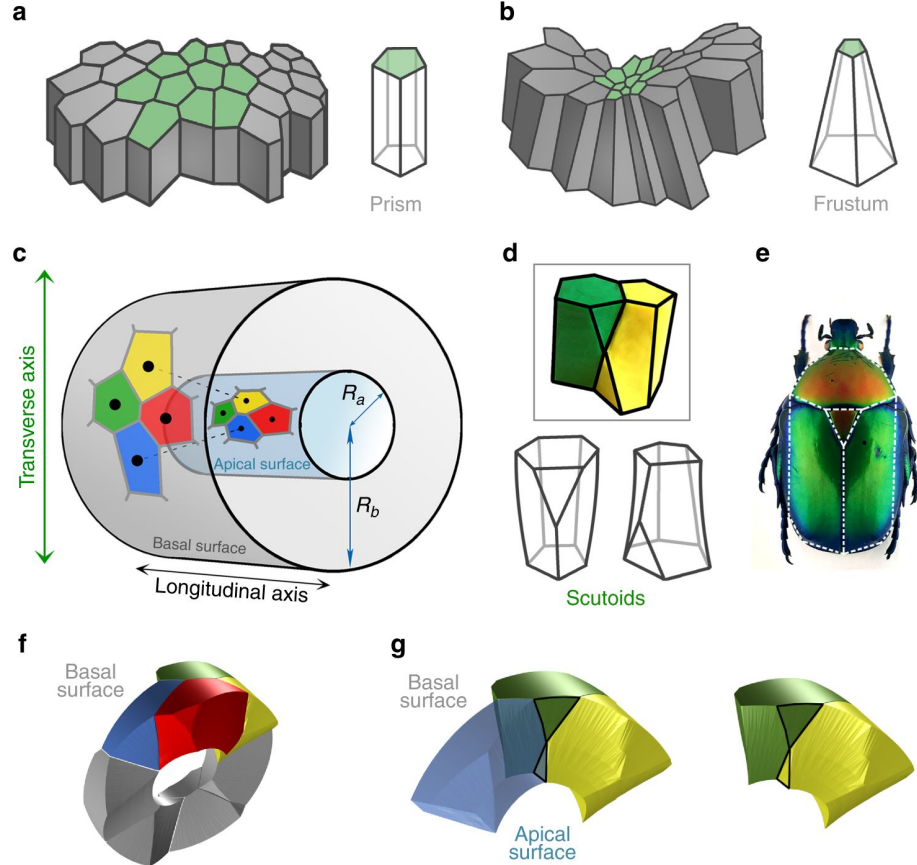
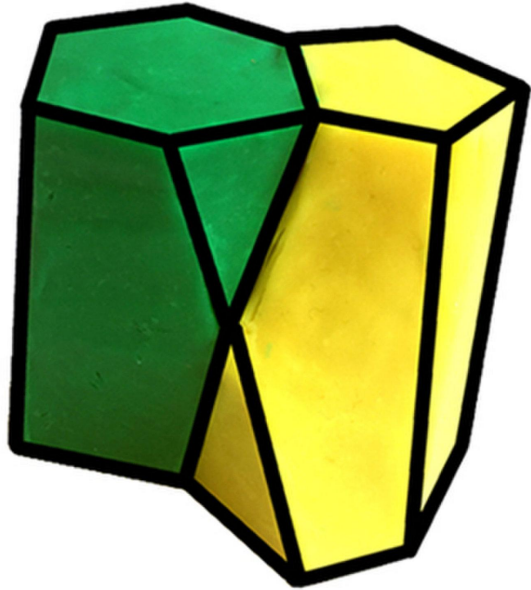
Motivation



Scutoid

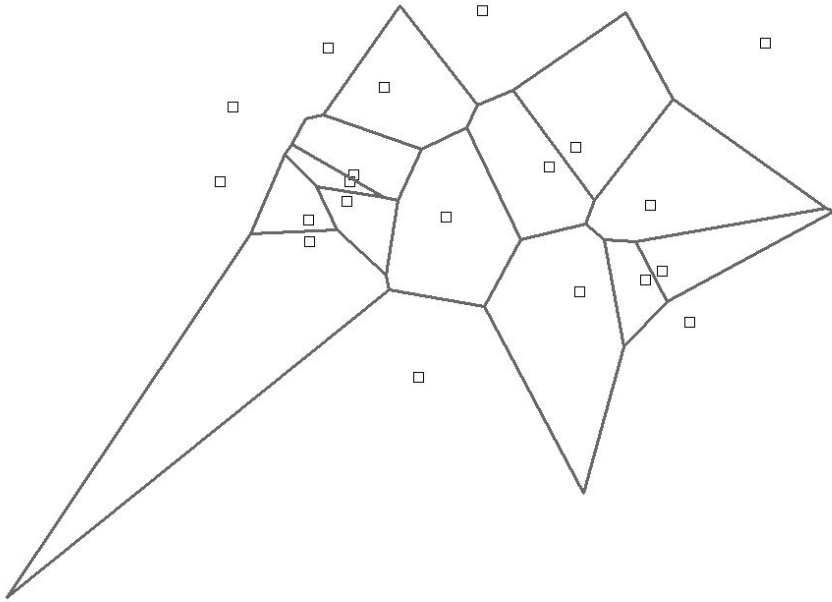


Scutoid



2D

Voronoi



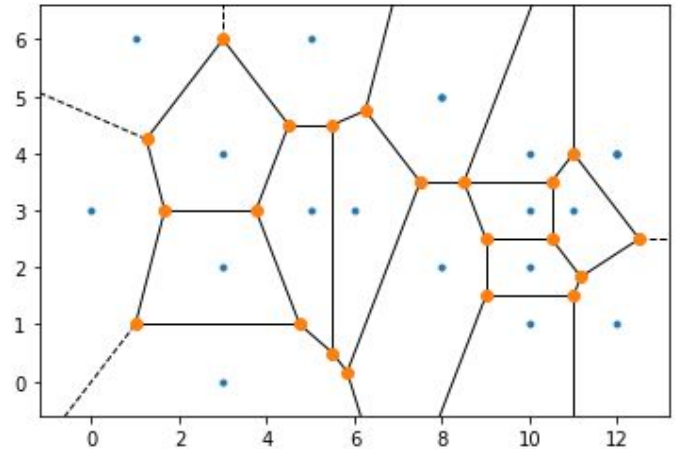
Eigene Darstellung

>> Als **Voronoi - Diagramm** (auch *Tiessen-Polygone* oder *Dirichlet-Zerlegung*) bezeichnet man eine bestimmte Aufteilung eines Raumes. Für eine gegebene Punktmenge ("Kerne") definiert jede Voronoi - Zelle den Anteil aller Punkte des Raumes, die zu dem zugeordneten Kern ihre Zelle am nächsten sind. <<

Scipy Package

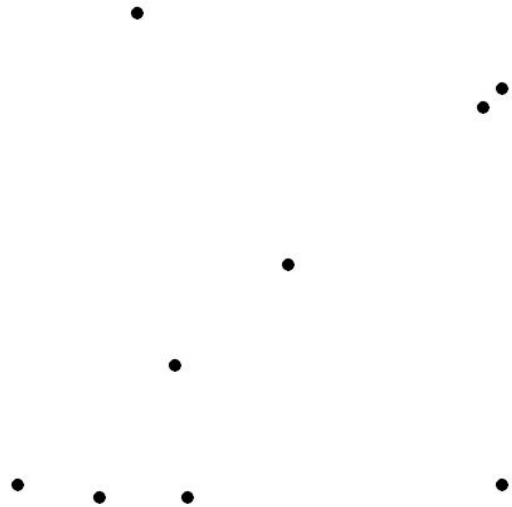
```
25
26
27 from scipy.spatial import Voronoi, voronoi_plot_2d
28 import numpy as np
29 import random
30
31 #points = np.array([[0, 1.5], [.5, 1.25], [.75, 2], [1, 1.75], [.75, 2.5]])
32
33 points = []
34 for i in range(0,20):
35     x = random.randint(0,12)
36     y = random.randint(0,6)
37     points.append((x,y))
38
39
40 vor = Voronoi(points)
41
42 voronoi_plot_2d(vor)
43 #plt.show()
```

In [26]: runfile('C:/Users/Lukas/Desktop/ICH/Uni/

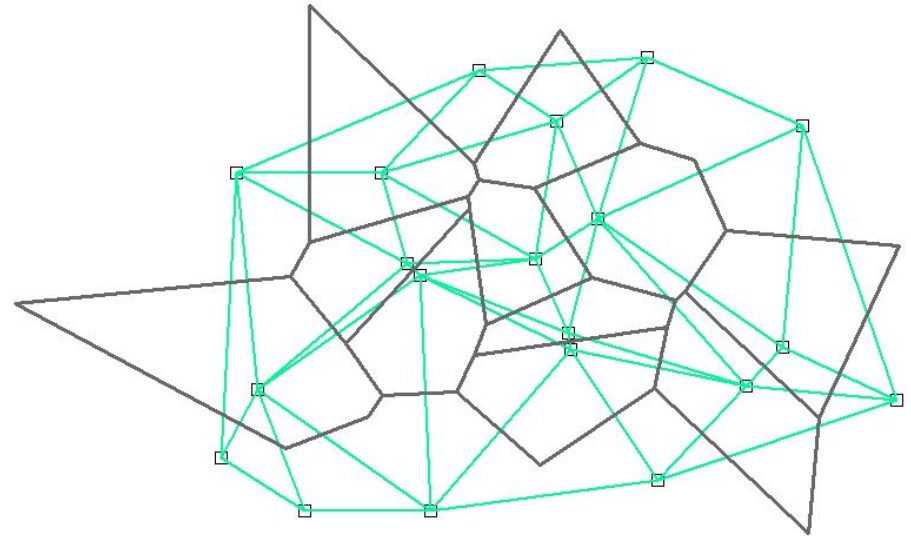


In [27]:

Arten der Generierung

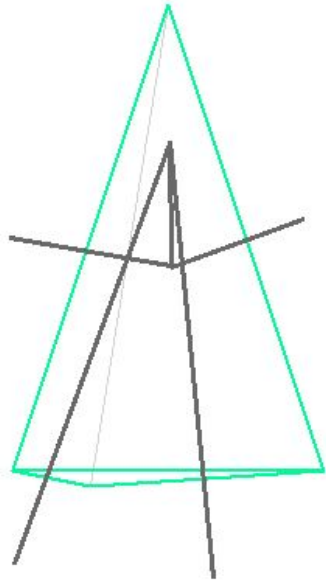


https://upload.wikimedia.org/wikipedia/commons/d/d9/Voronoi_growth_euclidean.gif

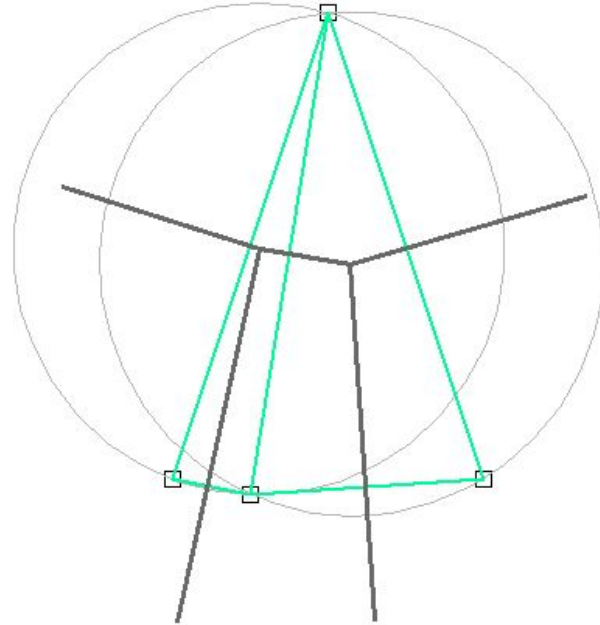


Eigene Darstellung

Methoden Unterschied

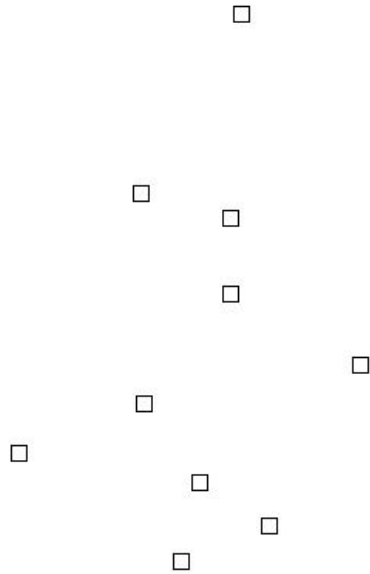


Kürzeste Verbindungen

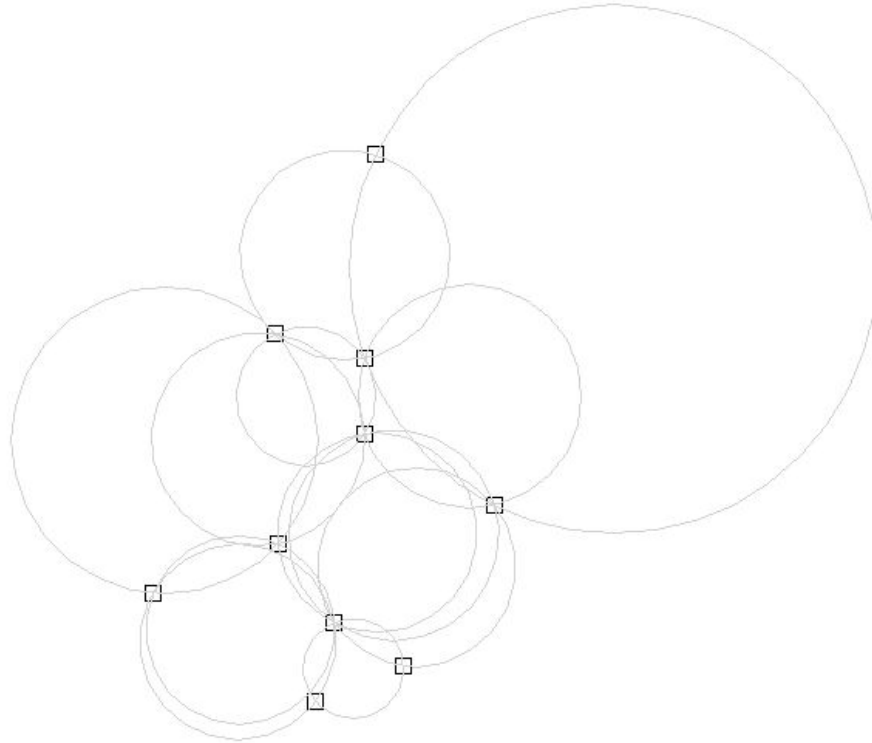


Delaunay Triangulation

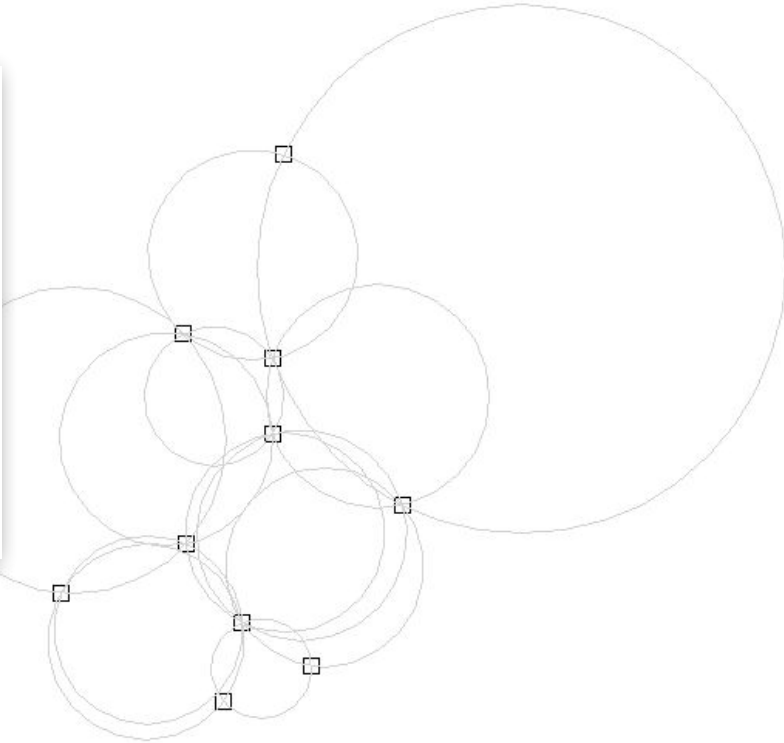
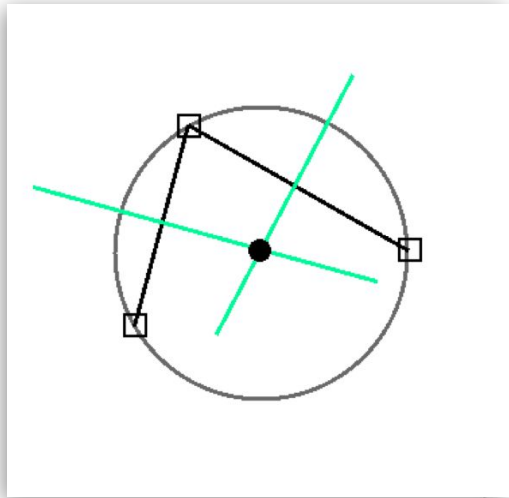
Delaunay Triangulation



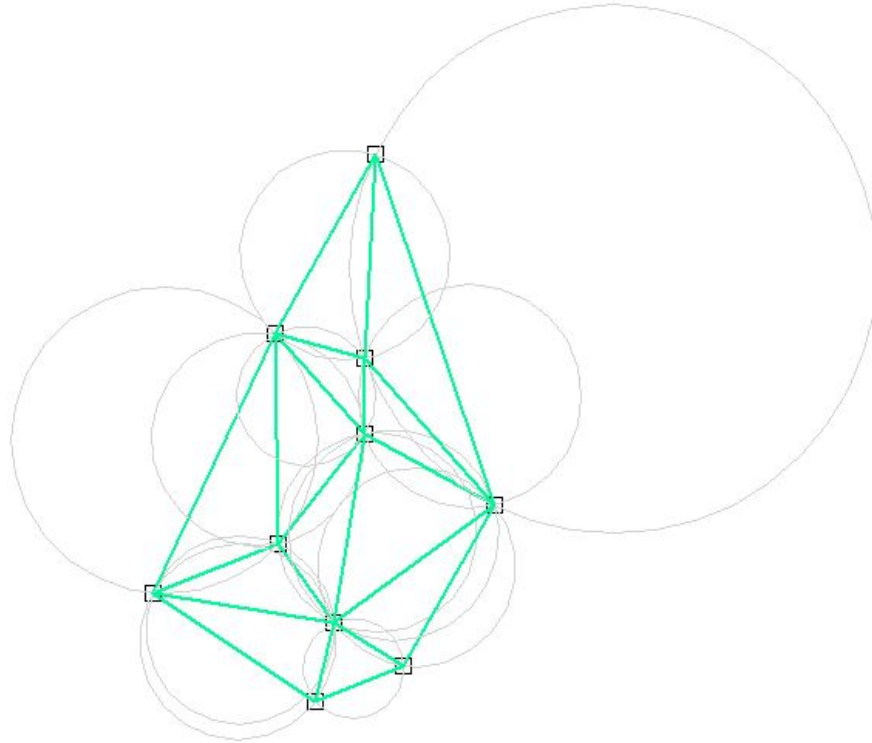
Delaunay Triangulation



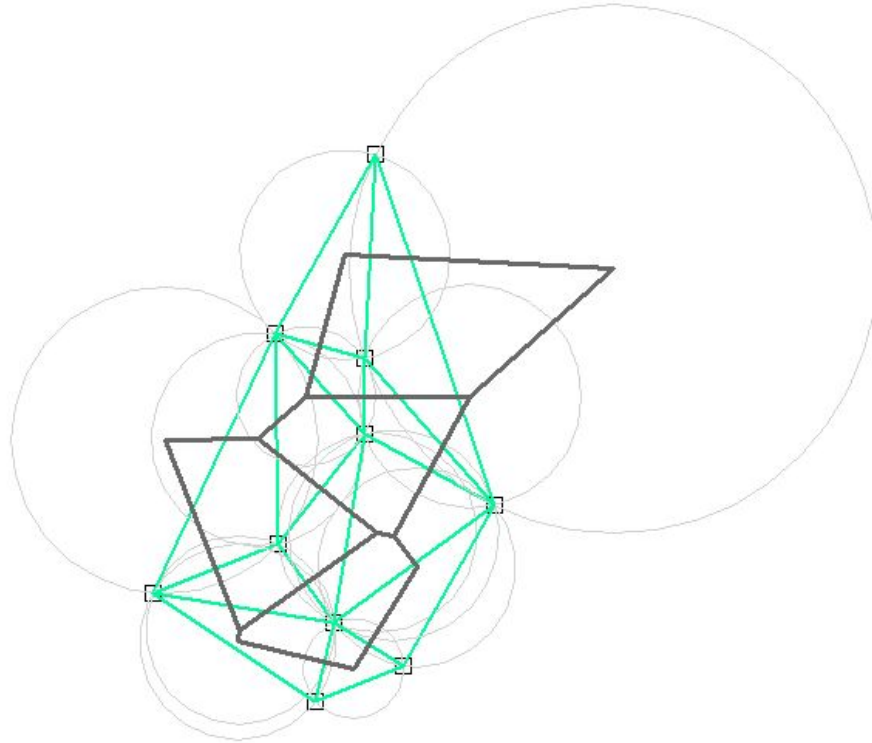
Delaunay Triangulation



Delaunay Triangulation



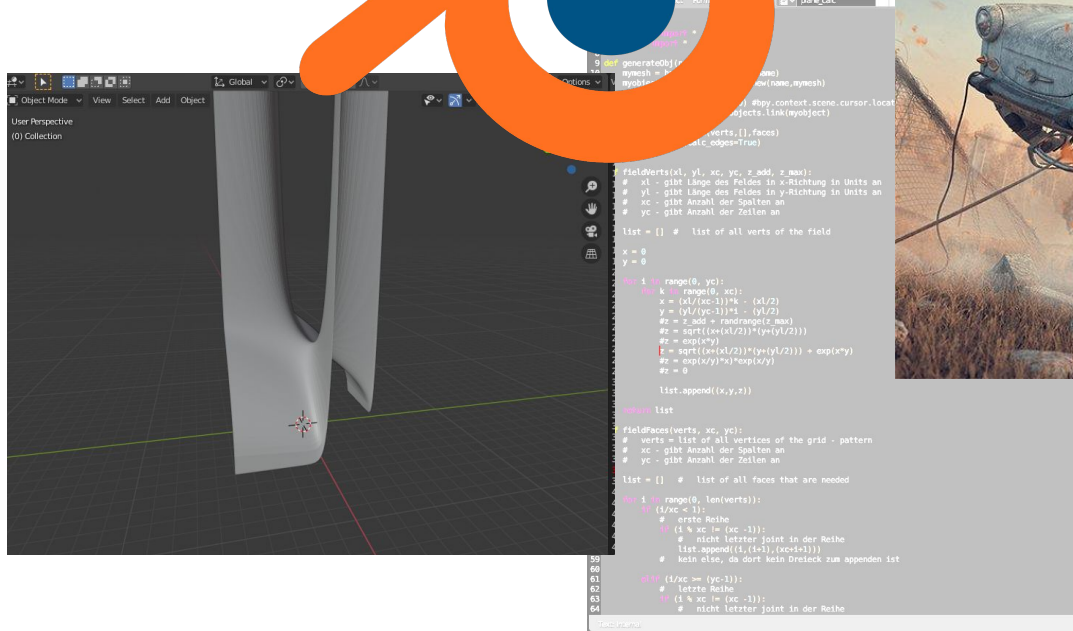
Delaunay Triangulation



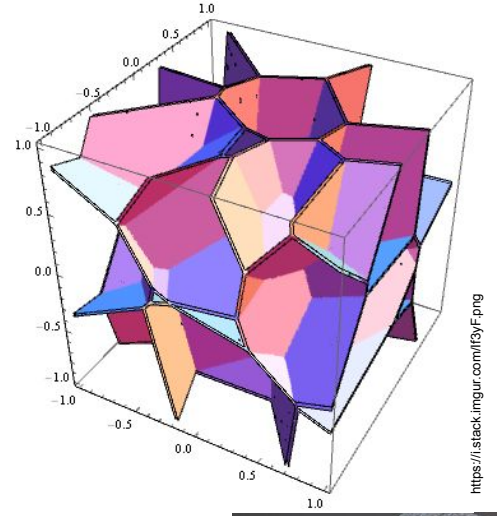
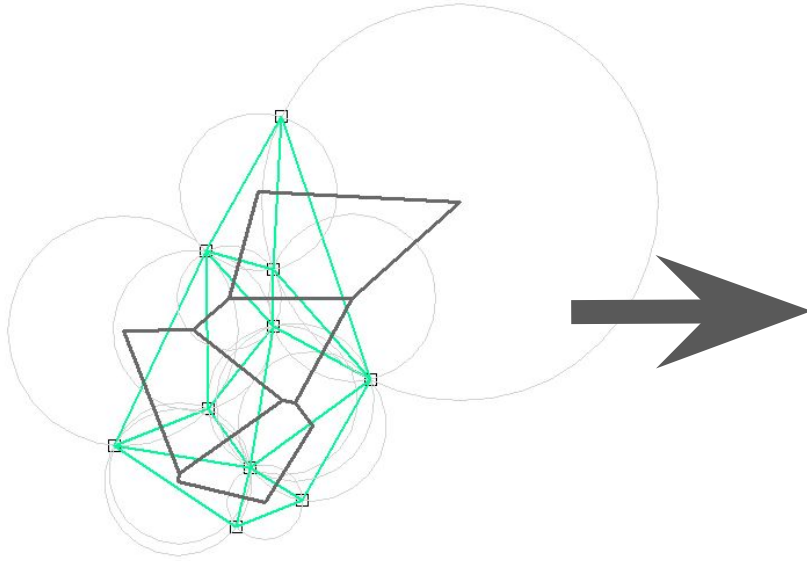
DEMO 2D

3D

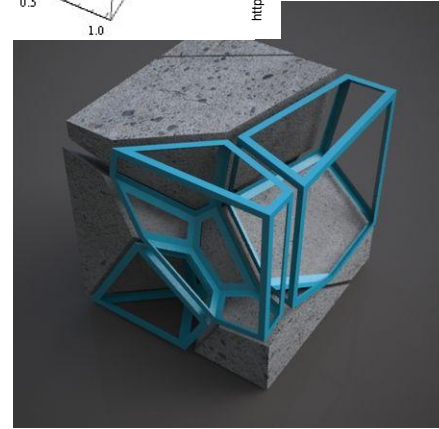
Blender



Voronoi 3D

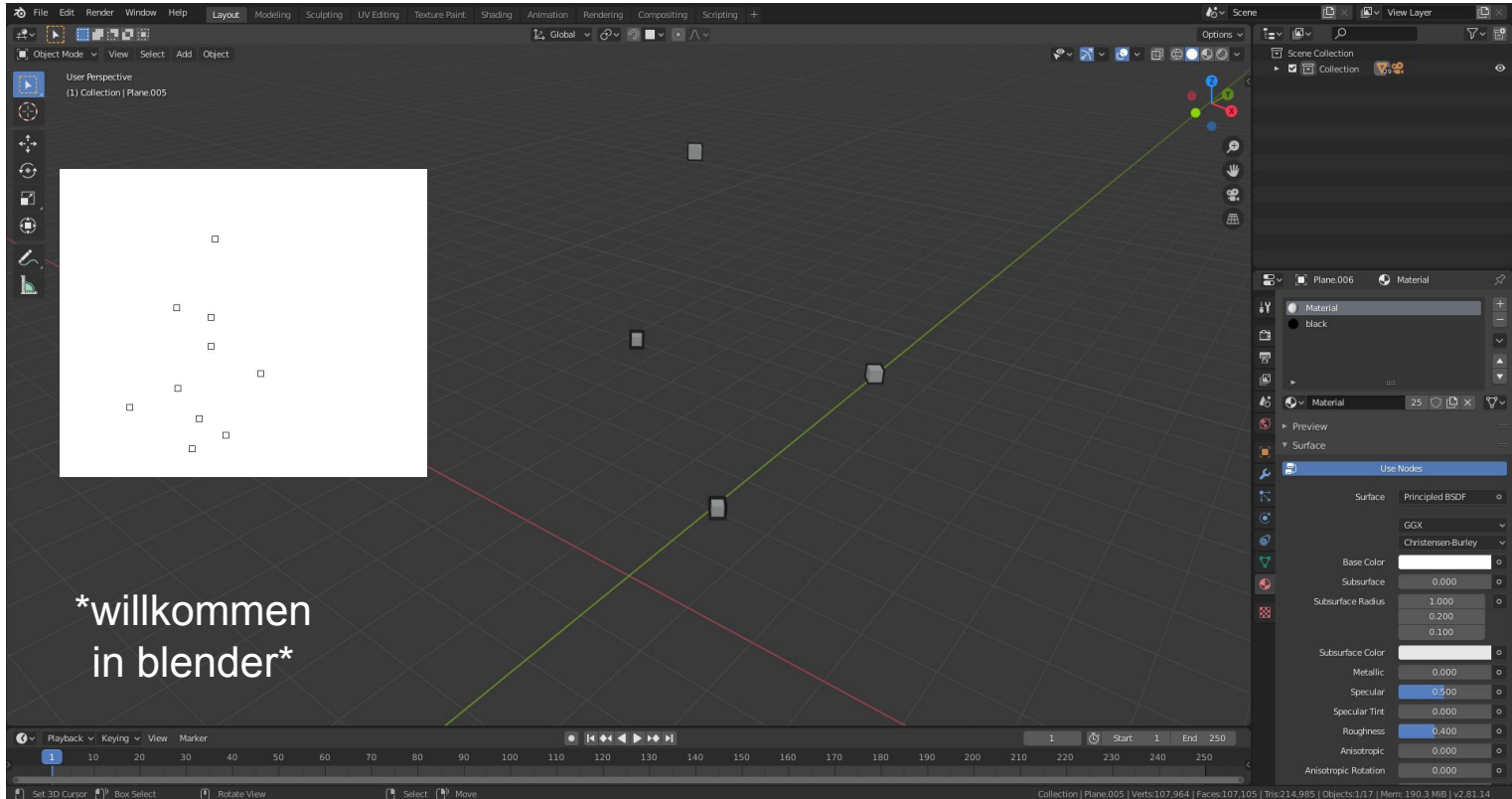


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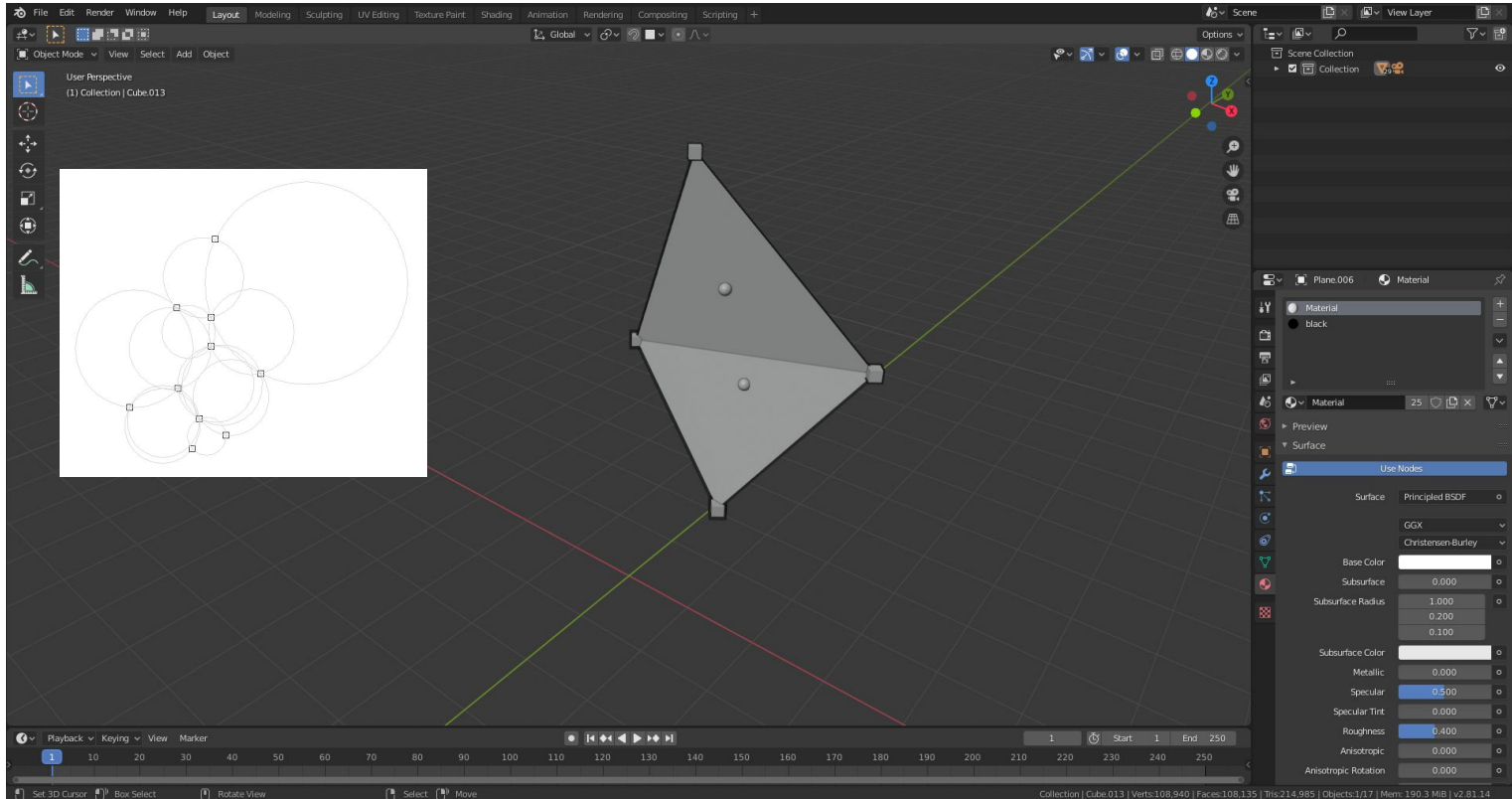


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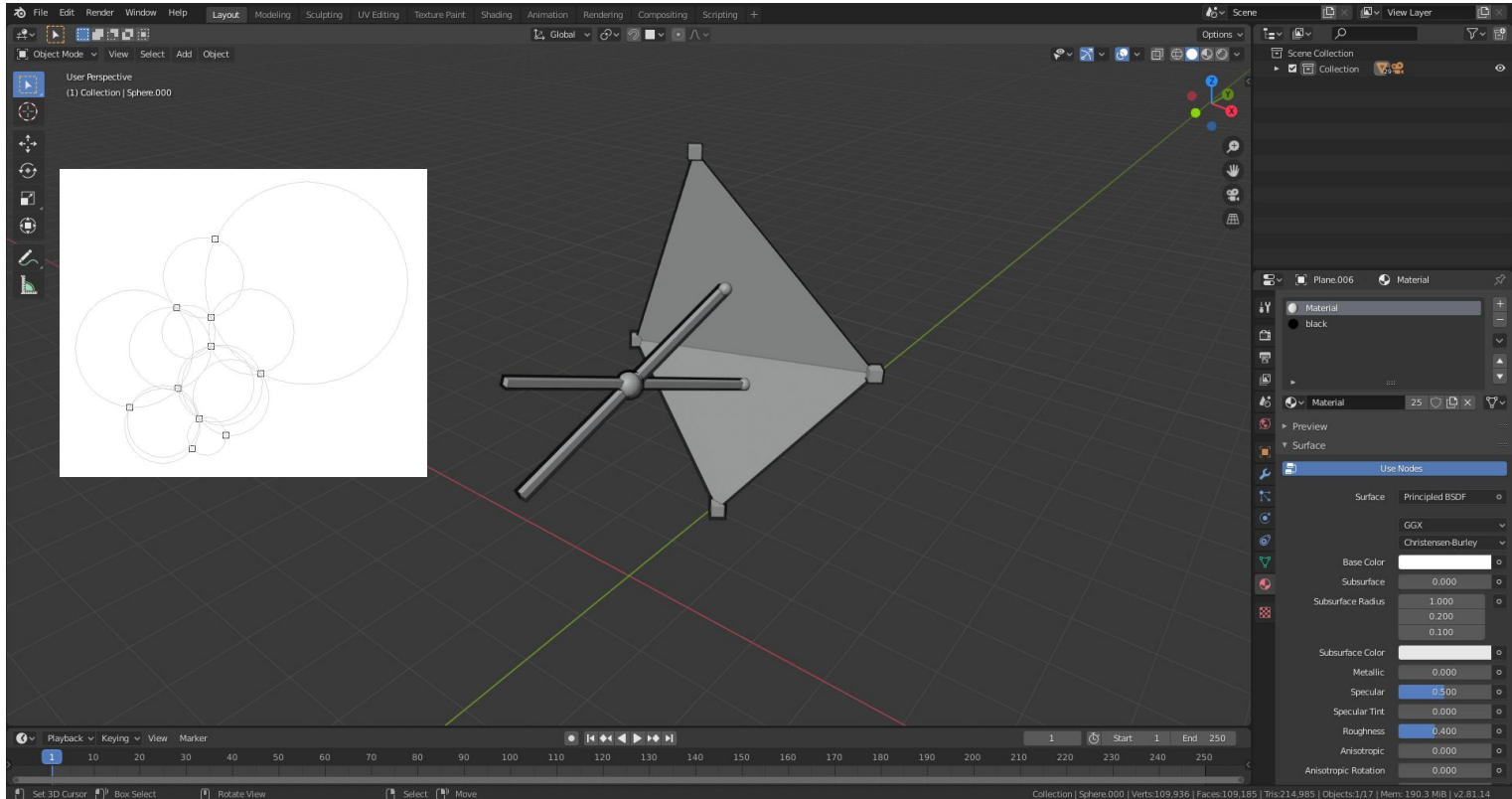
3D Konzept



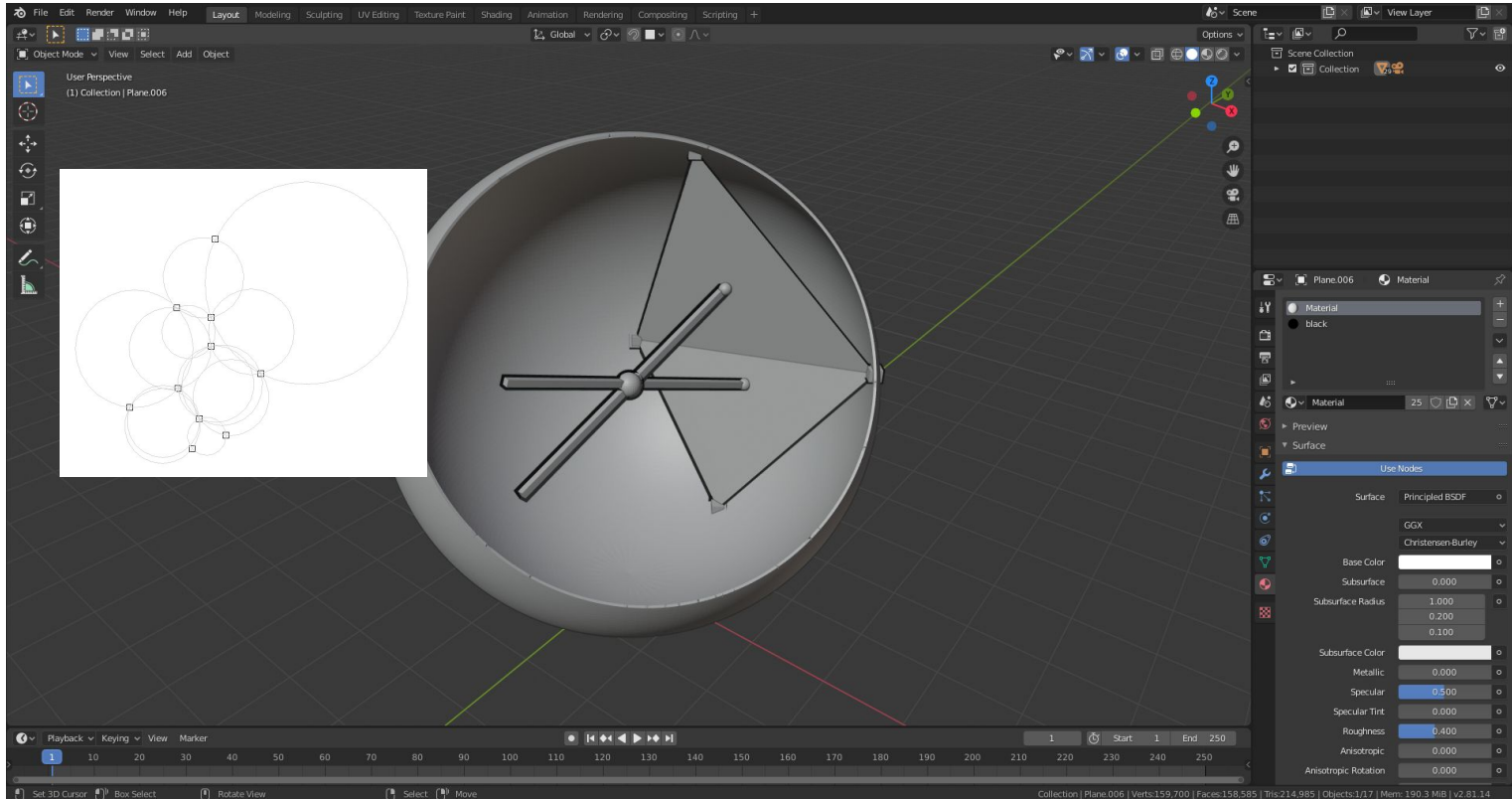
3D Konzept



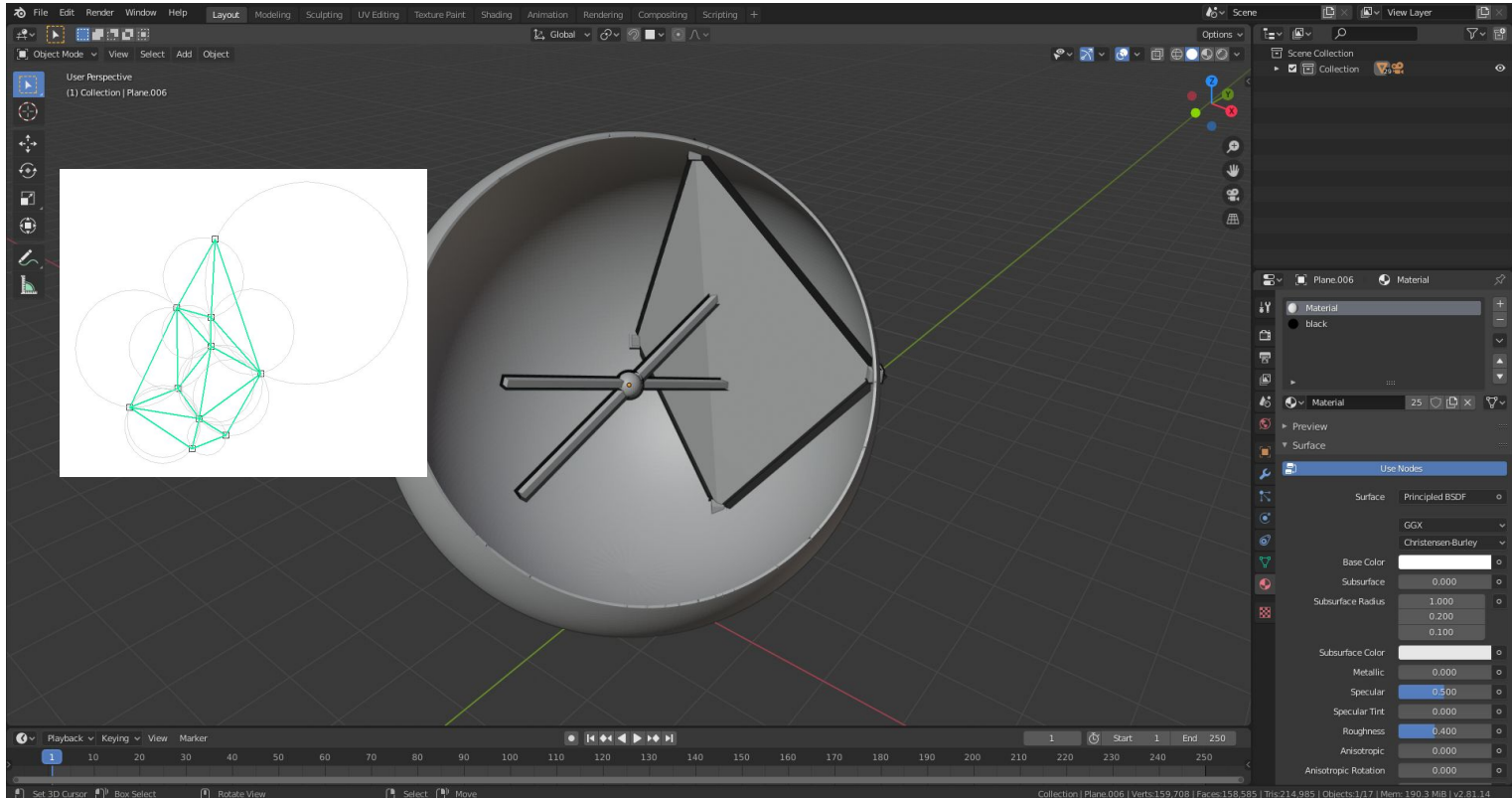
3D Konzept



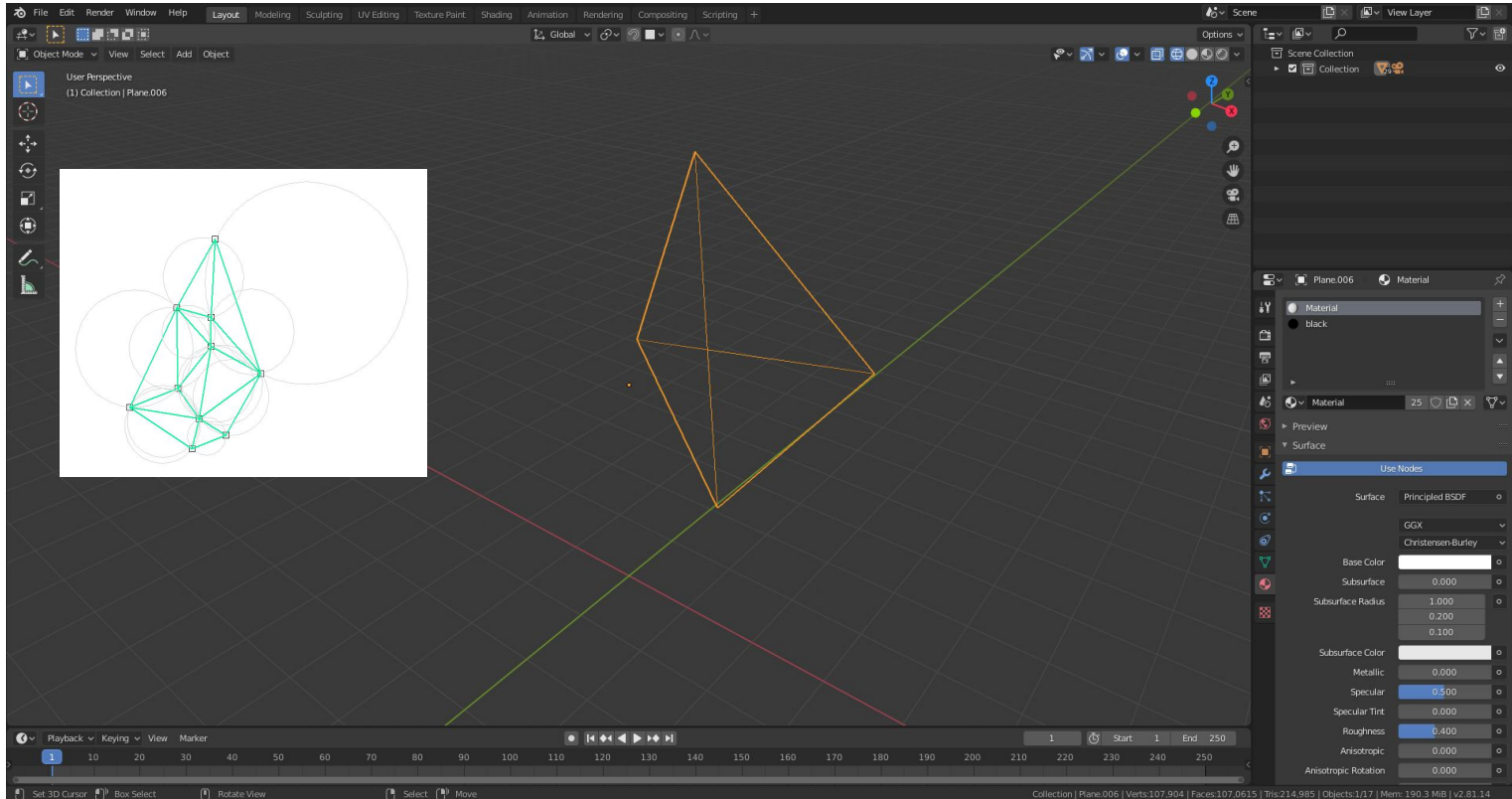
3D Konzept



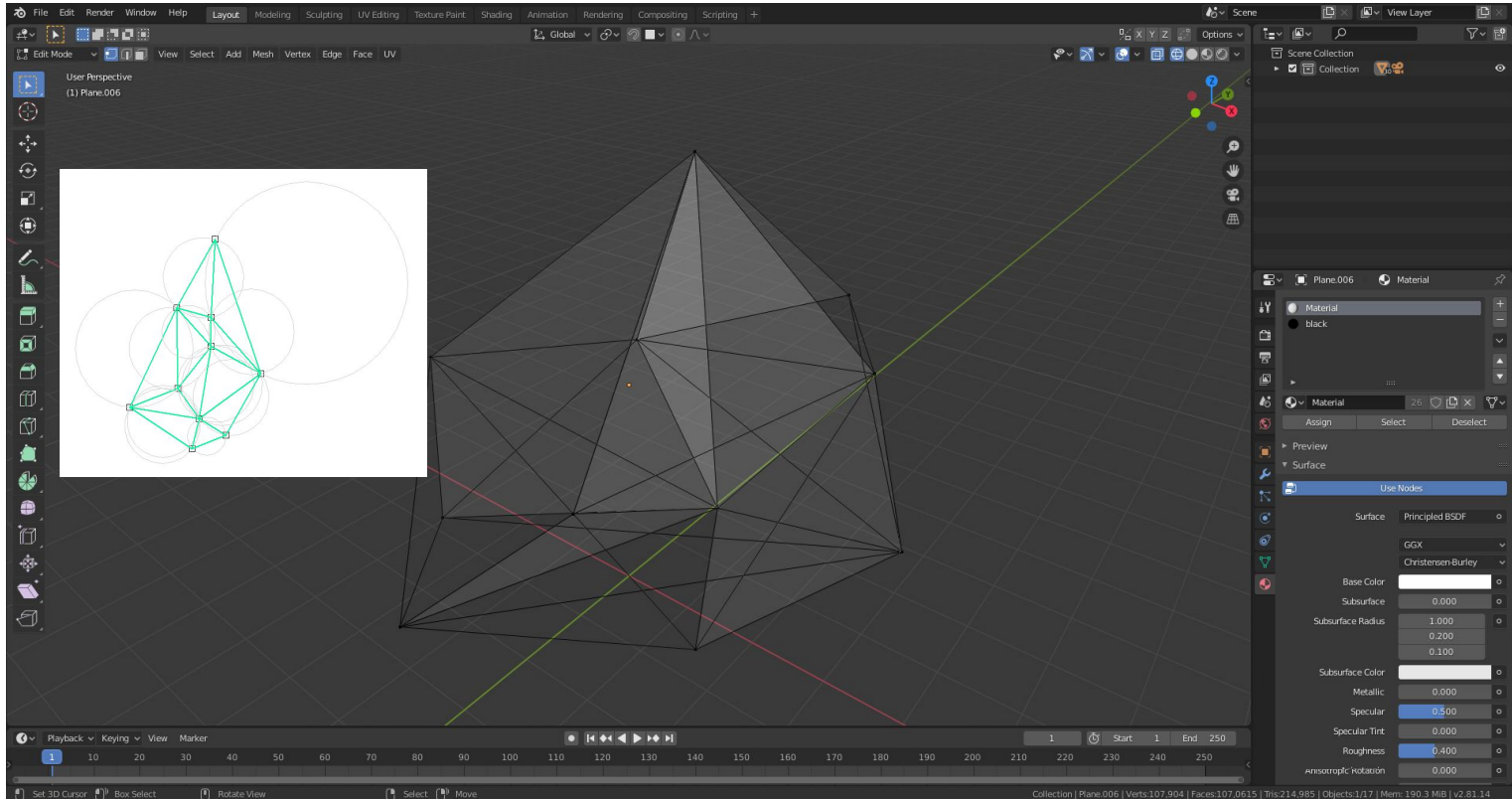
3D Konzept



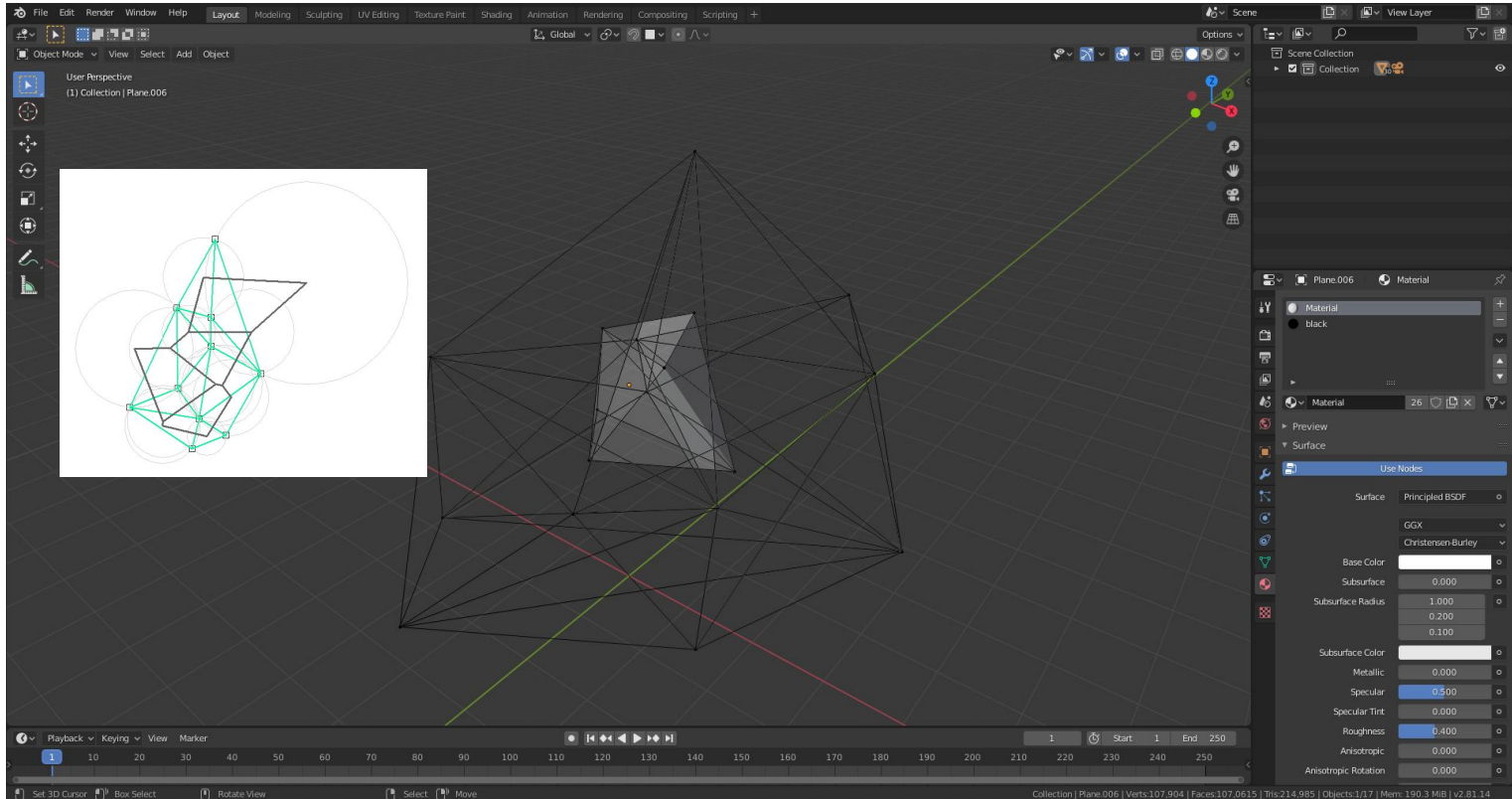
3D Konzept



3D Konzept

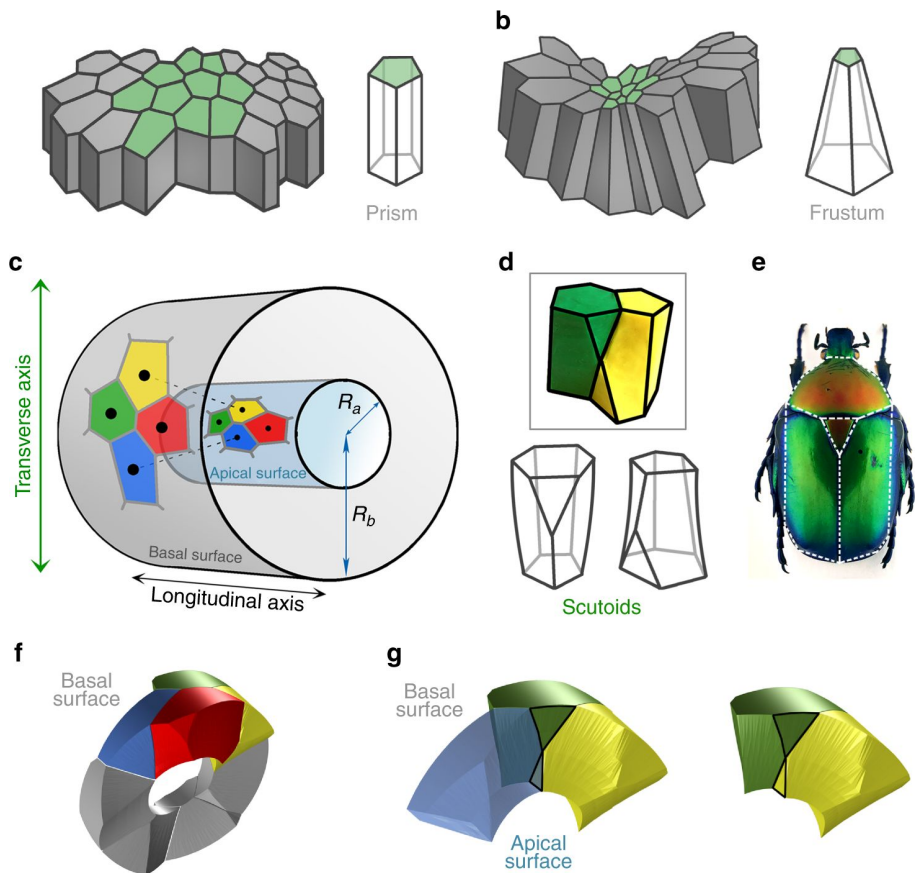
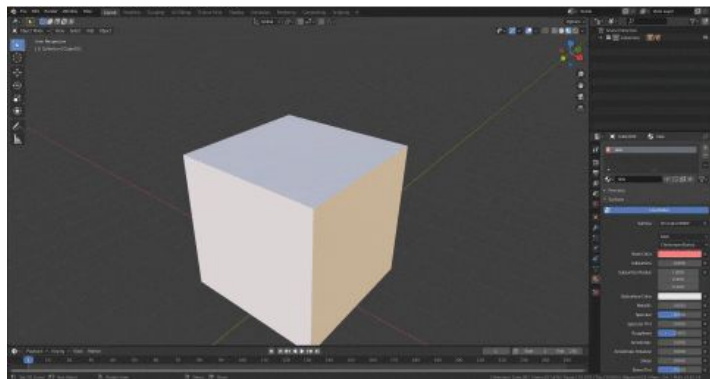


3D Konzept



DEMO 3D

Ziel



FRAGEN?

