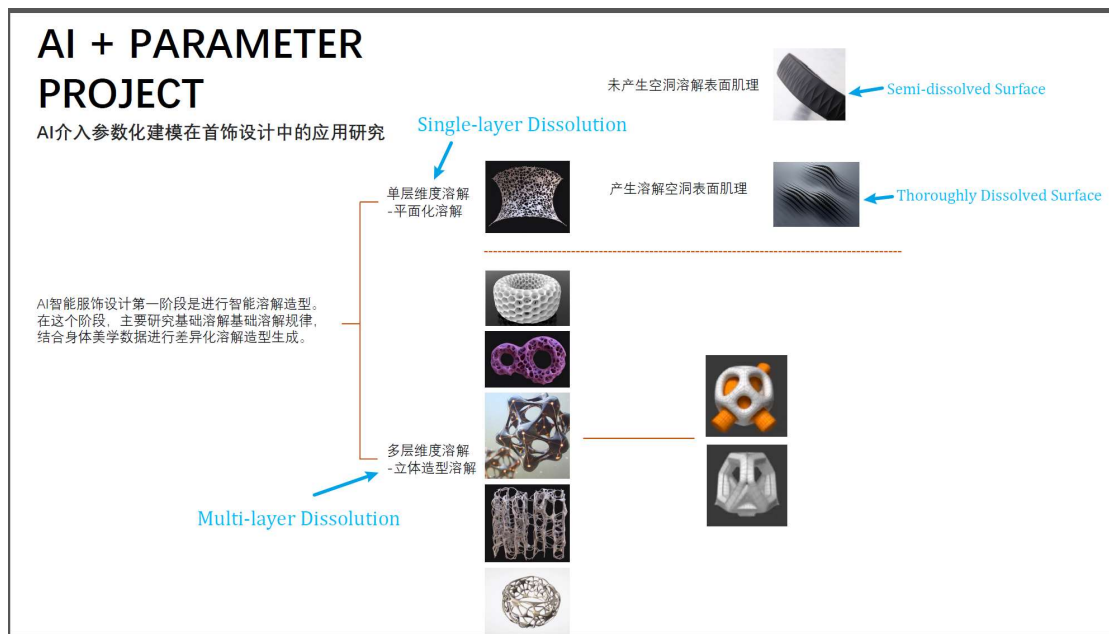


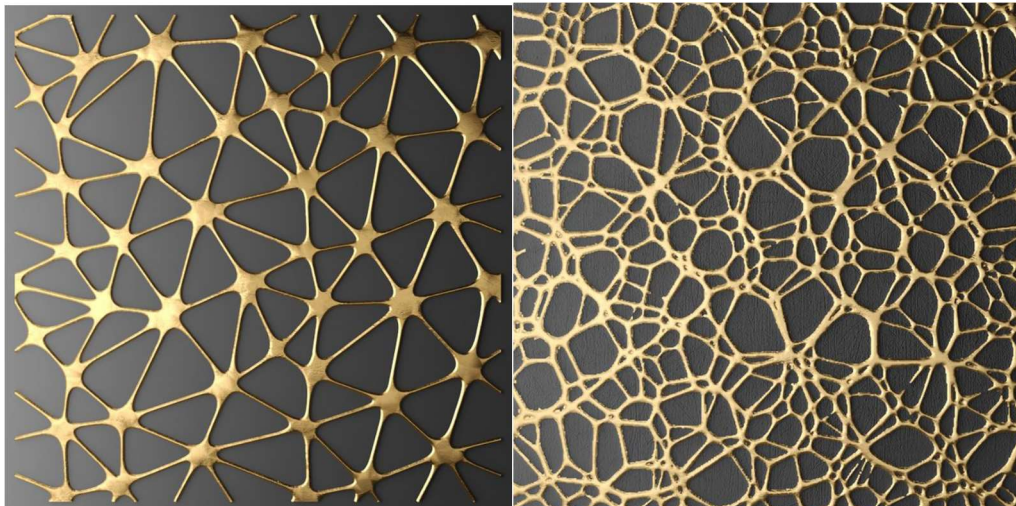
Supplementary Materials

The followings are about some progress I made on my project -- *The Interactive 3D Modeling Software for Industrial Design*. After some careful discussions with my mentor and further research, we decided to rename it as *Design Methods of Dissolved Models Based on Voronoi Diagram*, which highlights the features and methods of the project.

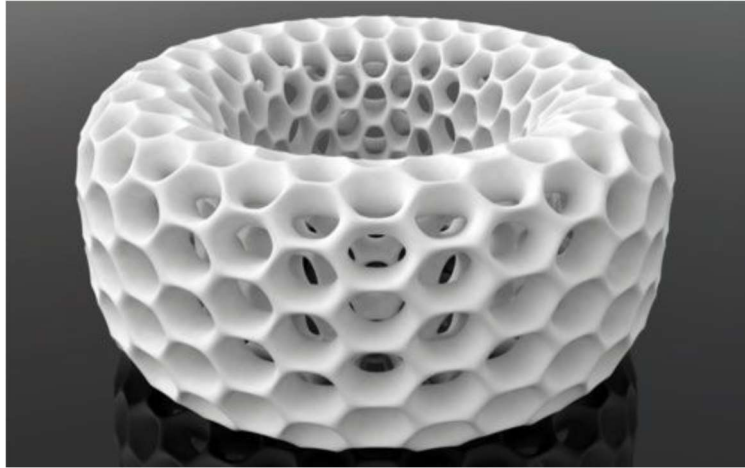
What are *Dissolved Models*? Basically, they are dissolved solid. And this method can be used to design accessories like necklaces. There are some concepts and models the project proposes.



Different types of the dissolved models

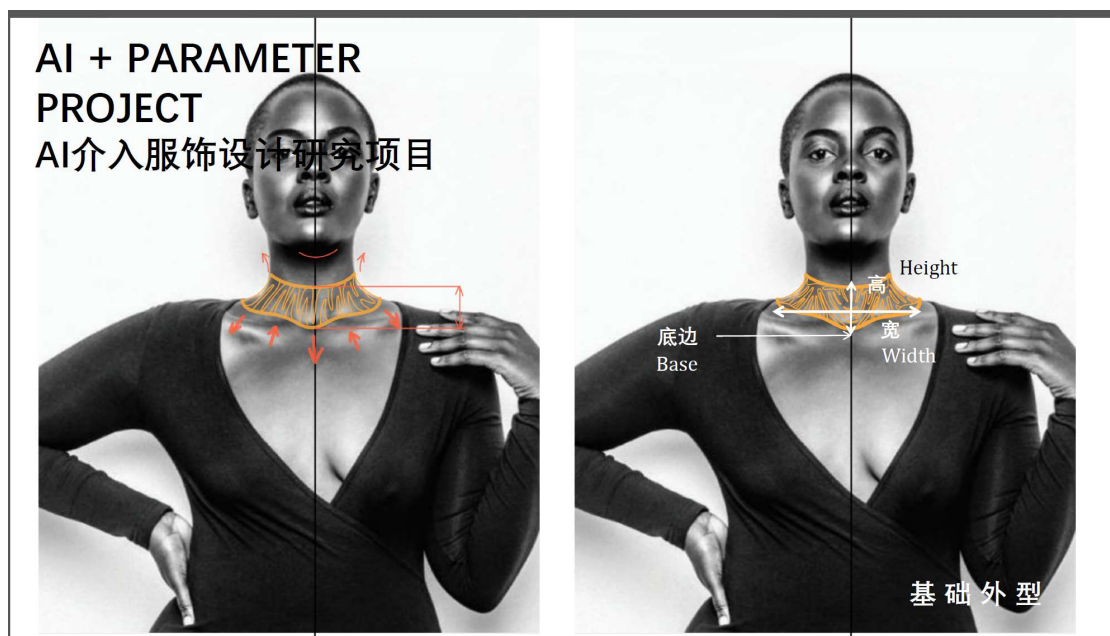


Single-layer Dissolution

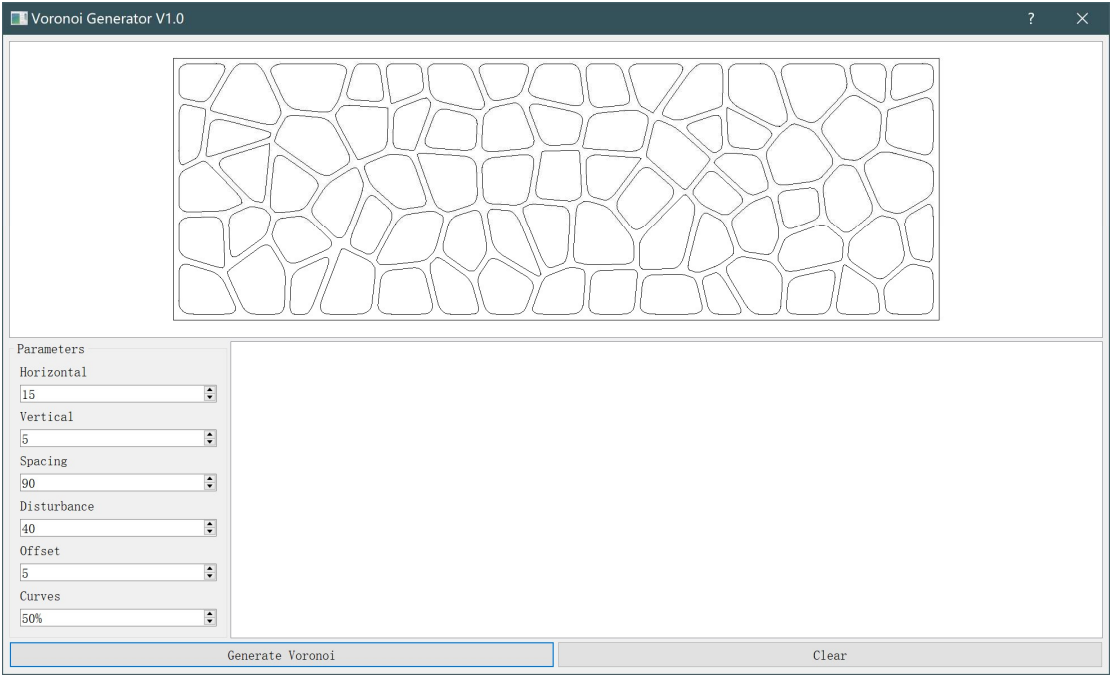
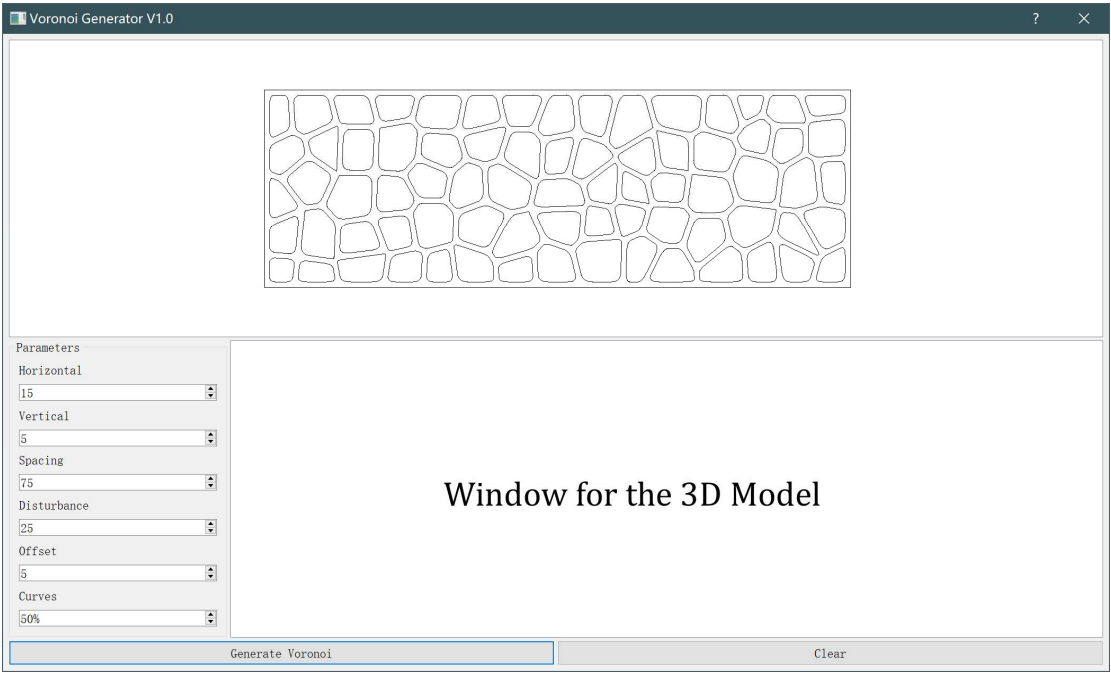


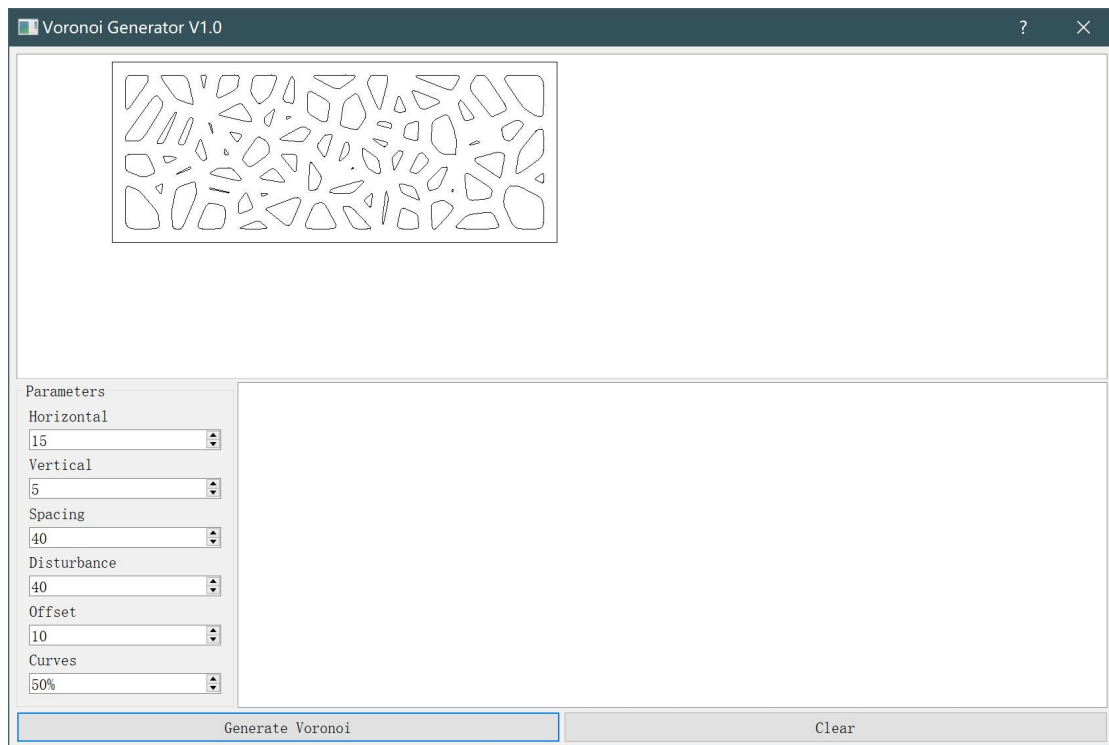
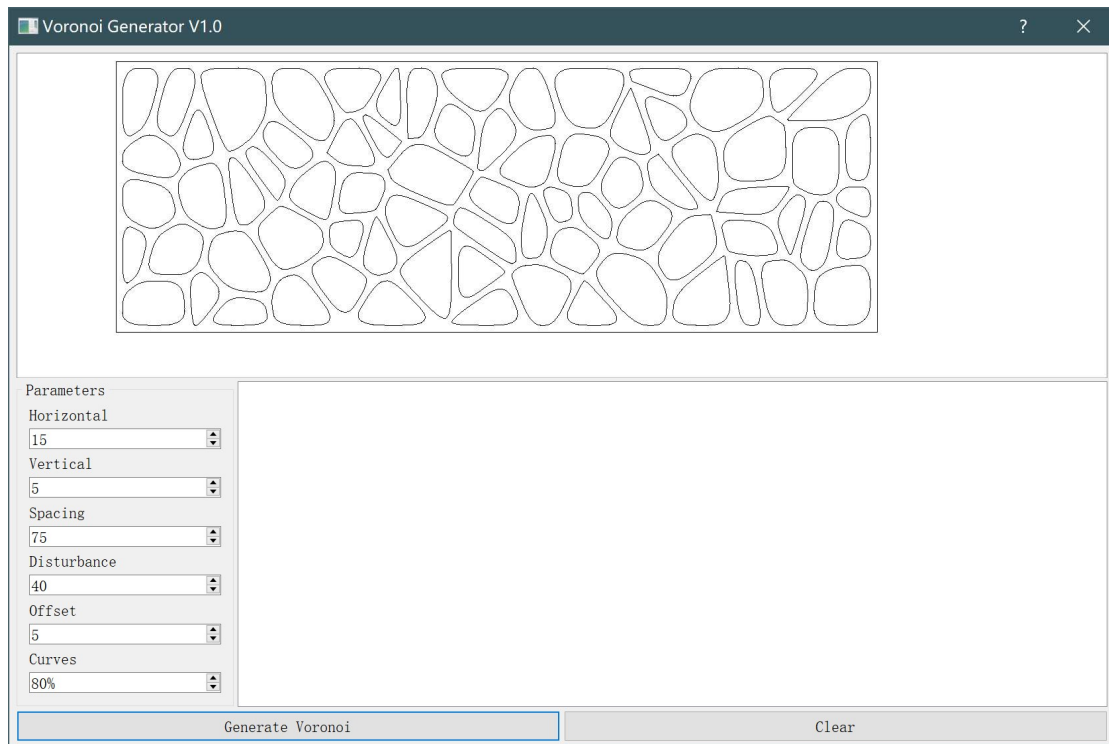
Multi-layer Dissolution

And these methods can be used to design accessories in a way like this.



What I am doing now is to build an APP to assist designers in designing accessories like those above. And I have ready finished a simple GUI and the function of generating Voronoi cells. Here are some demonstrations of my work.





The APP has now realized the following functions:

1. Generating Voronoi Diagrams with different numbers of cells.
2. Changing the sizes of Voronoi cells.
3. Adjusting regularity of the cells.
4. Altering the width of the cells' edges.
5. Customizing the shapes of the cells.

Now I am working on the deletion and addition of cells and its transformation to 3D dissolved models. In the meantime, changing the Voronoi diagram and enabling the 3D dissolved models to change simultaneously is still a challenge, which I will keep working on.