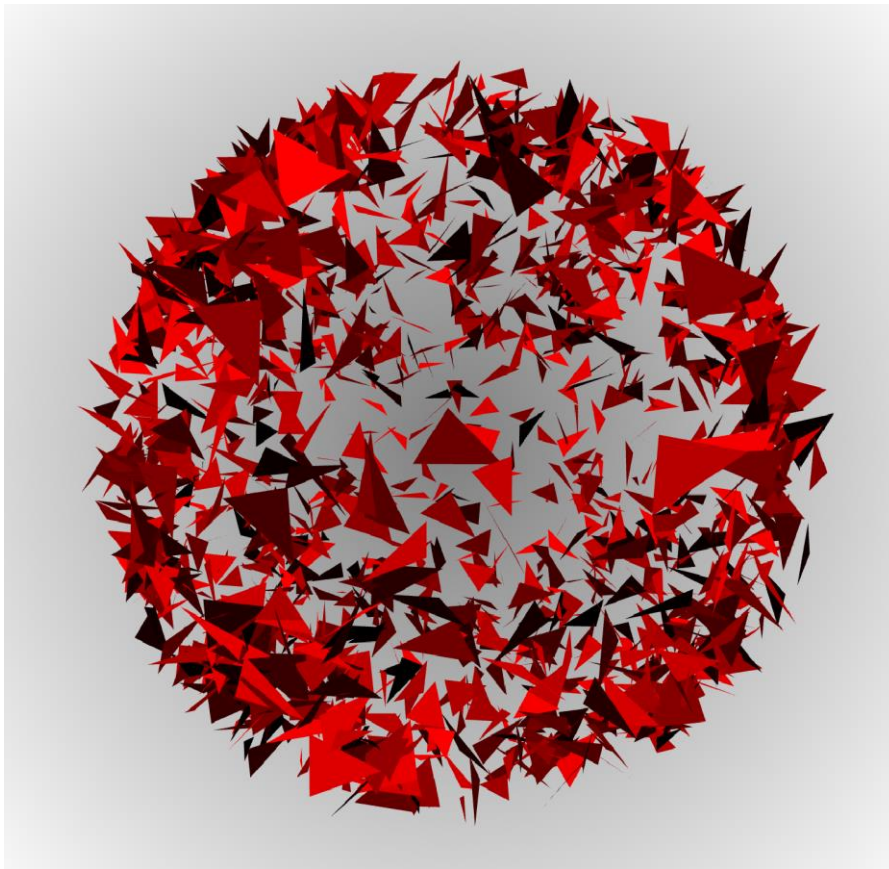


## Lab 9: 2D Shape 3D Clouds

This lab is the first time let you explore the 3D world, it tells you a 3D graphic world is actually also created from a 2D shapes.

1. Create 2D shapes uniform-randomly distributed on the surface of a sphere. You are allowed to use any sequential data structure.
2. Each shape of **random** size rotates in **random** direction.
3. Make the whole sphere rotating according to some axis (whatever x-axis, y-axis or any of your own axis except z-axis).
4. Make use of **Inheritance and Polymorphism** in C++ knowledge we learnt to find out how to implement Mouse Wheel feature in openFrameworks (OF), then add the feature to your project.
5. Add another key control or mouse control effect designed by yourself.

A demo screenshot is attached here:



Grading Rubric:

1. Create 2D shapes uniform-randomly distributed on the surface of a sphere: 20 pts.
2. Each shape of **random** size rotates in **random** direction: 20 pts.
3. Make the whole sphere rotating: 10 pts.
4. Add Mouse Wheel feature: 10 pts.
5. Add another your own mouse or key control feature: 10 pts.

6. Proper memory management: 10 pts.
7. No compiling errors: 10 pts.
8. Good Submission: 10 pts.