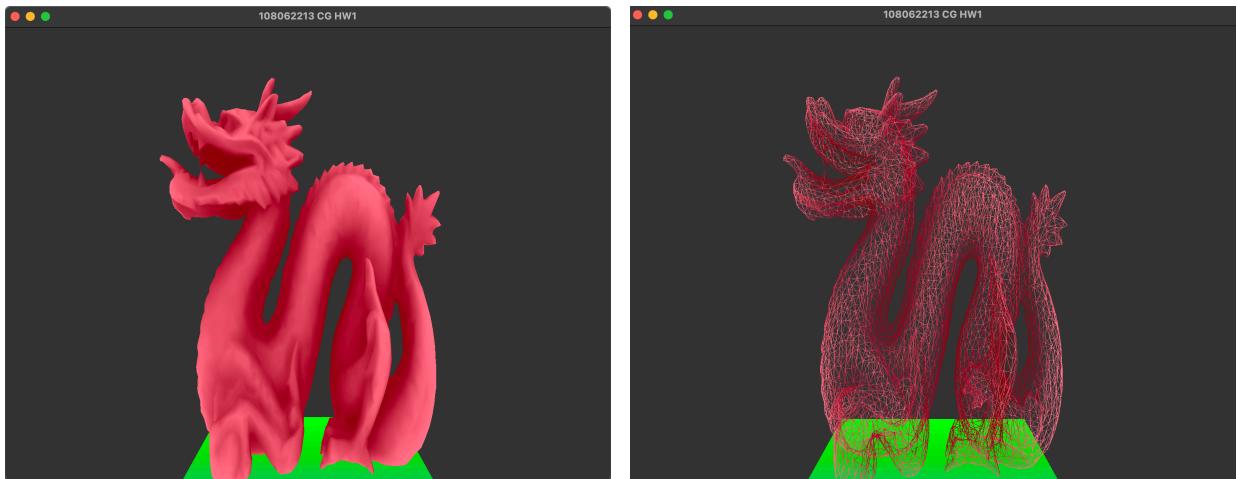
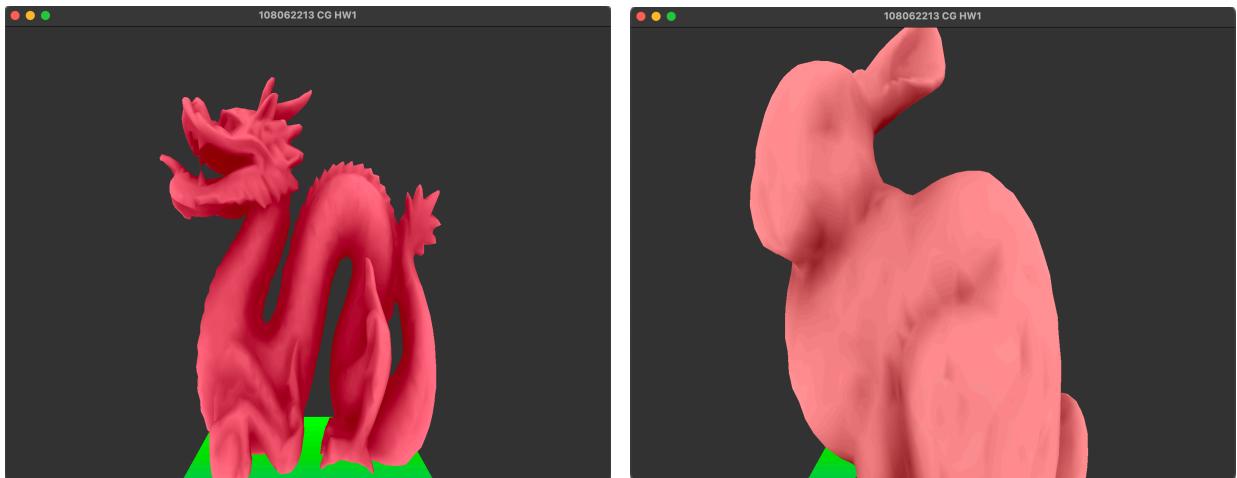


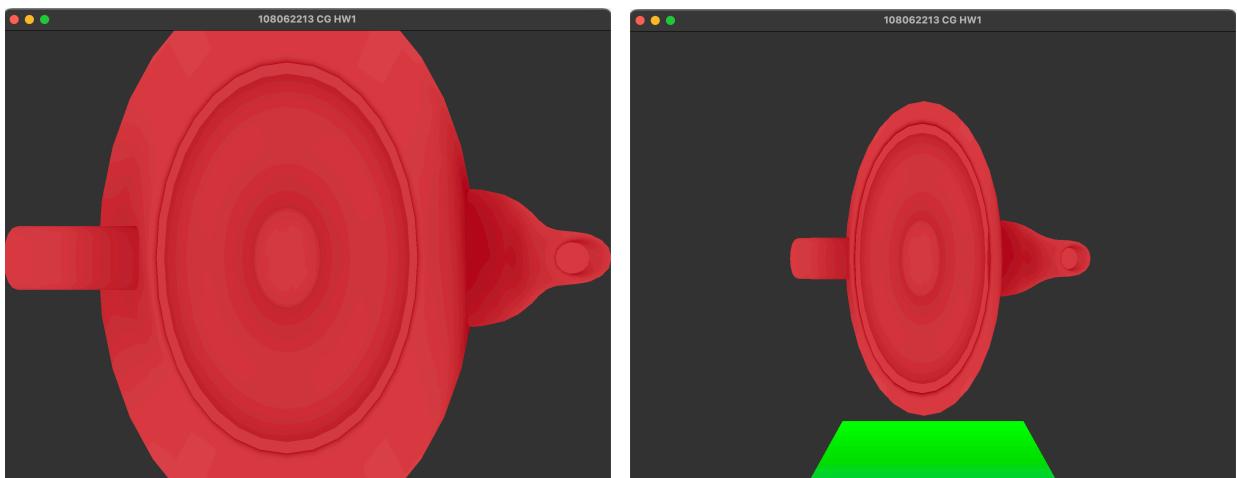
1. Key W: switch between solid and wireframe mode.



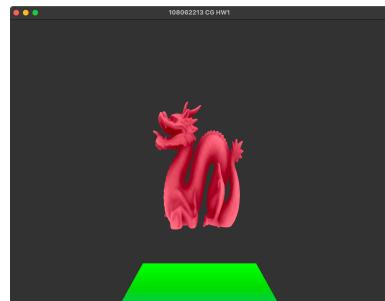
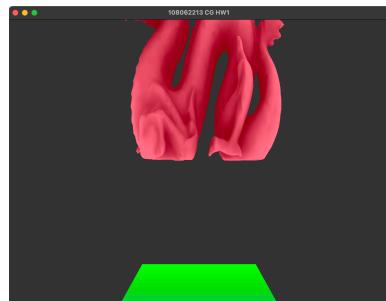
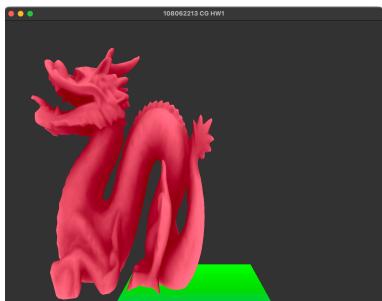
2. Key Z: switch to the previous model.  
Key X: switch to the next model.



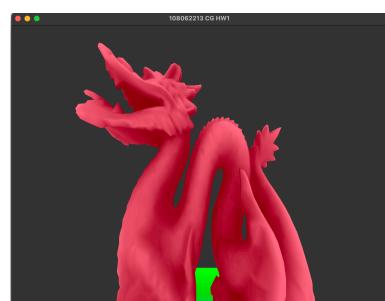
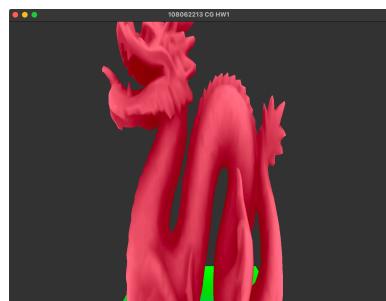
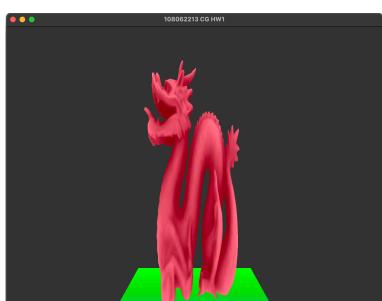
3. Key O: switch to Orthogonal Projection mode.  
Key P: switch to Perspective Projection mode.



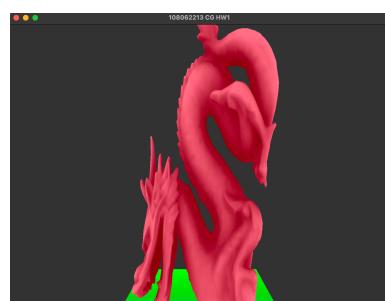
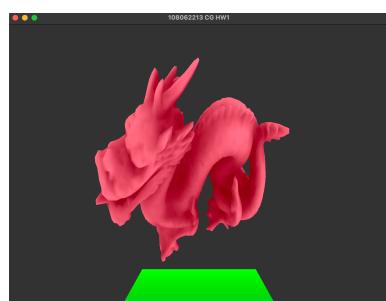
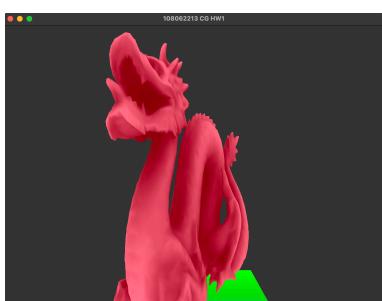
4. Key T: switch to GeoTranslate mode.
  1. Press mouse left button can move the model in X-axis and Y-axis.
  2. Scroll up/down mouse middle button can move model in Z-axis.



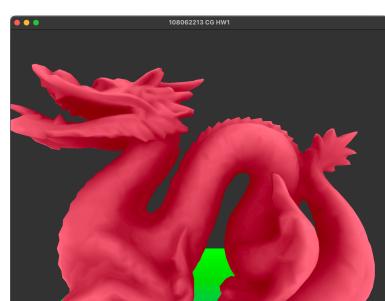
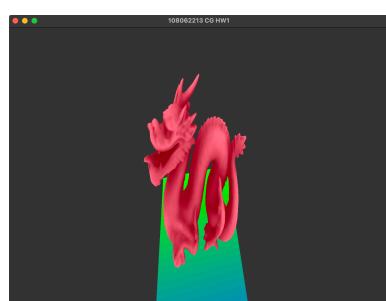
5. Key S: switch to GeoScale mode.
  1. Press mouse left button can scale the model in X-axis and Y-axis.
  2. Scroll up/down mouse middle button can scale model in Z-axis.



6. Key R: switch to GeoRotate mode.
  1. Press mouse left button can rotate the model in X-axis and Y-axis.
  2. Scroll up/down mouse middle button can rotate model in Z-axis.

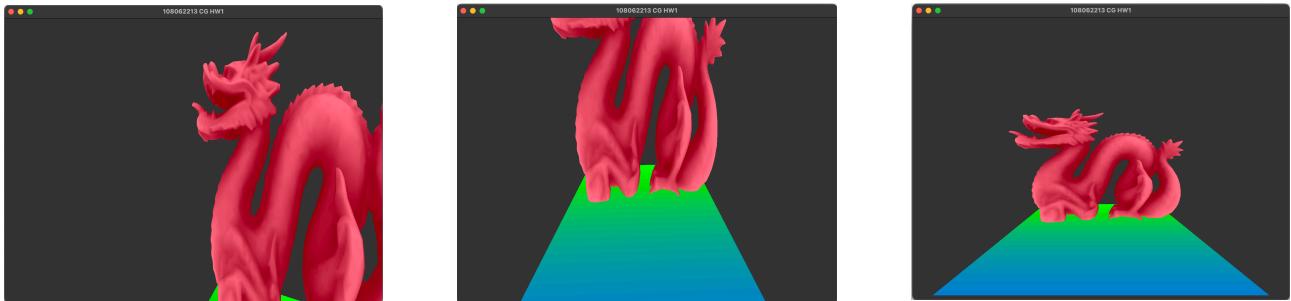


7. Key E: switch to ViewEye mode.
  1. Press mouse left button can move the camera eye in X-axis and Y-axis.
  2. Scroll up/down mouse middle button can move the camera eye in Z-axis.



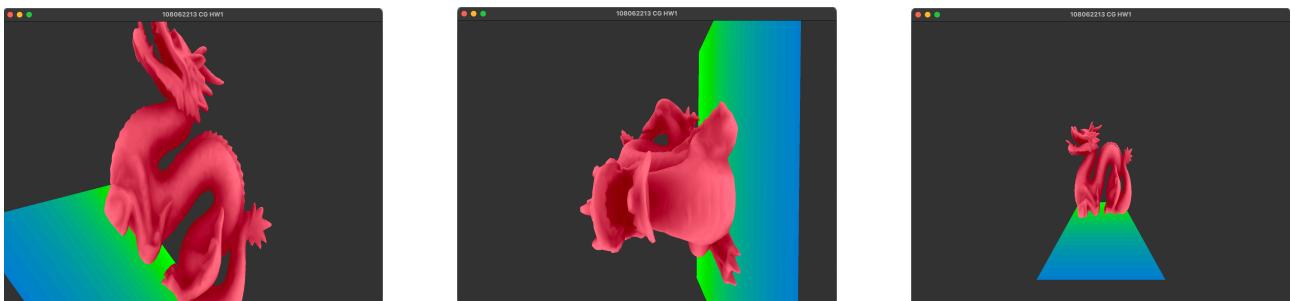
8. Key C: switch to ViewCenter mode.

1. Press mouse left button can move the camera center in X-axis and Y-axis.
2. Scroll up/down mouse middle button can move the camera center in Z-axis.



9. Key U: switch to ViewUp mode.

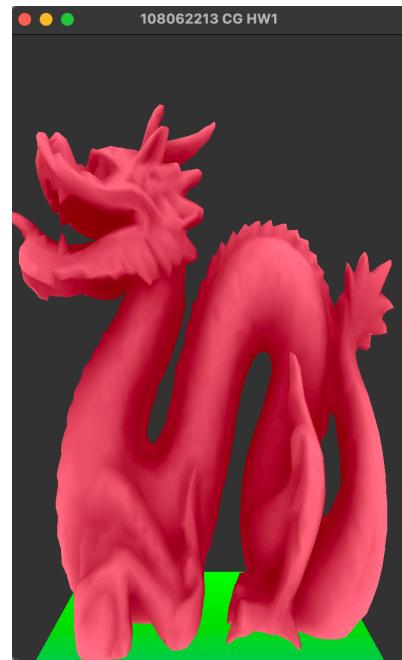
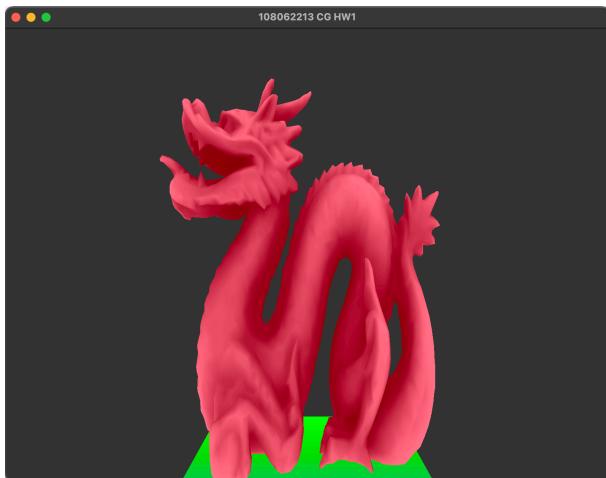
1. Press mouse left button can move the camera up vector in X-axis and Y-axis.
2. Scroll up/down mouse middle button can move the camera up camera in Z-axis.



10. Key I: Print Information including Translation Matrix, Rotation Matrix, Scaling Matrix, View Matrix and Projection Matrix.

```
Information:  
Translation Matrix:  
(1, 0, 0, -0.707076)  
(0, 1, 0, 0.0701923)  
(0, 0, 1, 0)  
(0, 0, 0, 1)  
  
Rotation Matrix:  
(0.897736, 0, 0.440535, 0)  
(0, 1, 0, 0)  
(-0.440535, 0, 0.897736, 0)  
(0, 0, 0, 1)  
  
Scaling Matrix:  
(1.04435, 0, 0, 0)  
(0, 1.28747, 0, 0)  
(0, 0, 1, 0)  
(0, 0, 0, 1)  
  
View Matrix:  
(0.96637, 0.133058, -0.21694, 0.0254367)  
(-0.29554, 2.02609, -0.0738112, 0.27451)  
(0.209879, 0.0661517, 0.975487, -2.03965)  
(0, 0, 0, 1)  
  
Projection Matrix:  
(0.893815, 0, 0, 0)  
(0, 1.19175, 0, 0)  
(0, 0, -1.00002, -0.00200002)  
(0, 0, -1, 0)
```

## 11. Change Window Size



Others

1. Key ESC: exit the program

```
1 case GLFW_KEY_ESCAPE:  
2     exit(0);
```

2. Key SPACE: reset to the initial state (excluding window size)

