

The Z-Buffer Algorithm

1 Introduction to Visibility

When we ray traced scenes, we determined which object was in front by intersecting with all objects and then selecting the closest one. When we rasterize, we consider the objects one by one and then discard them. We do not keep them around to compare their depths. Instead, we store the depth of each pixel alongside its RGB color values. Then, when we rasterize a new object, we compare the depth of the object we are rasterizing with the depth stored in the pixel. If the new object is closer, we replace the color and depth. Otherwise, we ignore it. In the example below, the blue object is at distance 0.2, the green object is at distance 0.3, and the red object is at distance 0.4.

