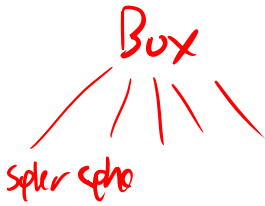
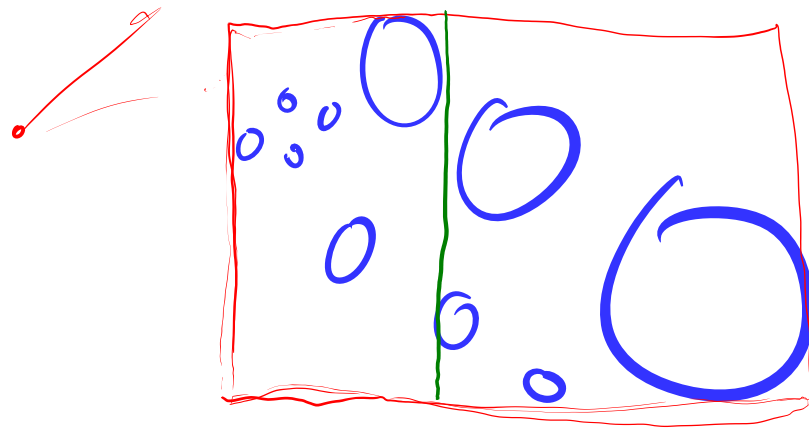
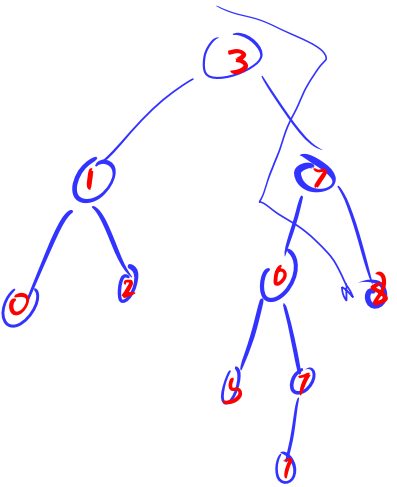


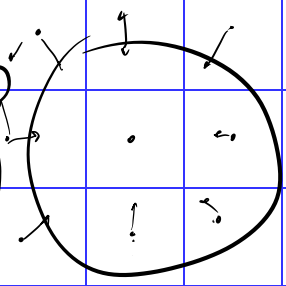
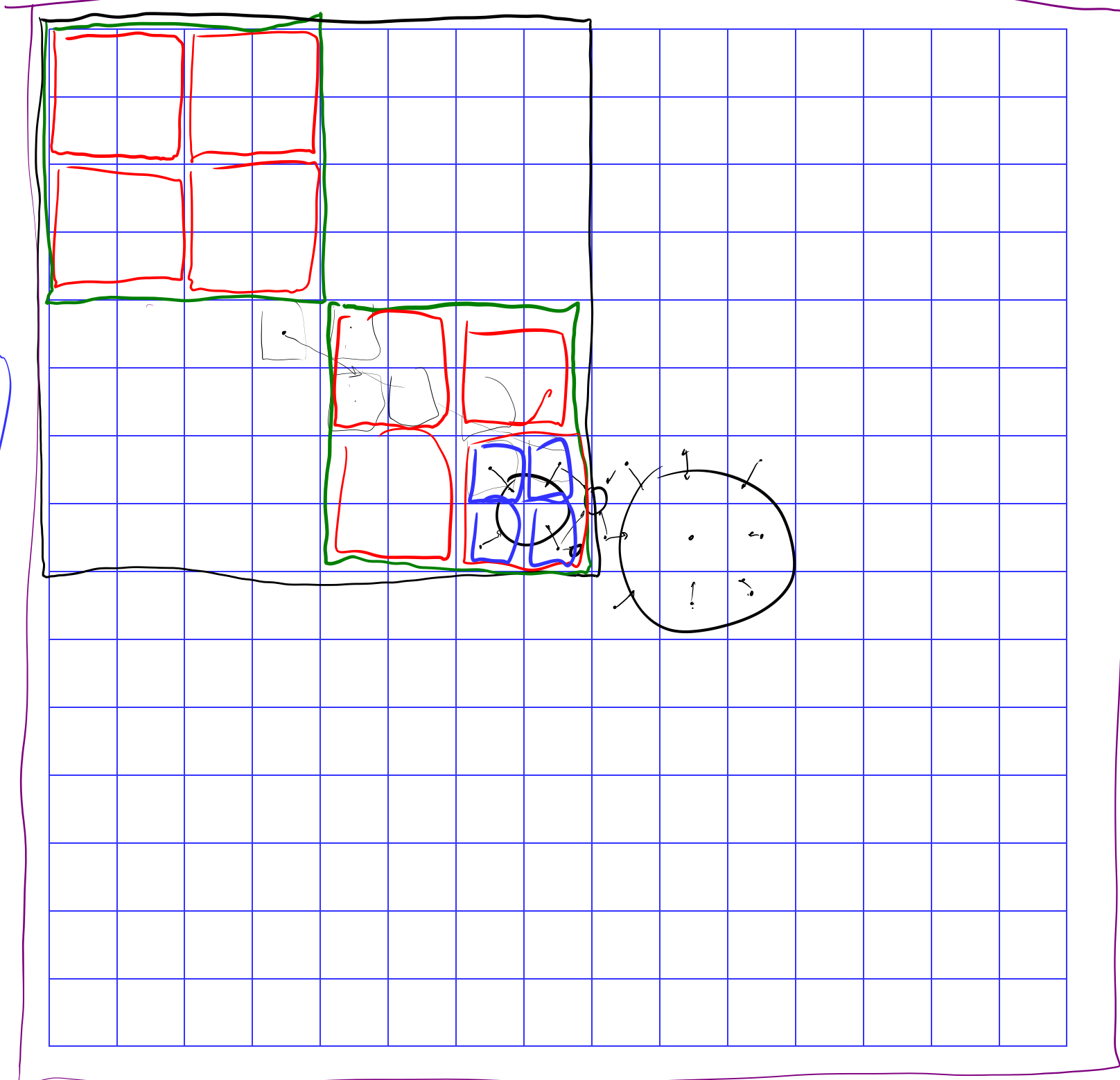
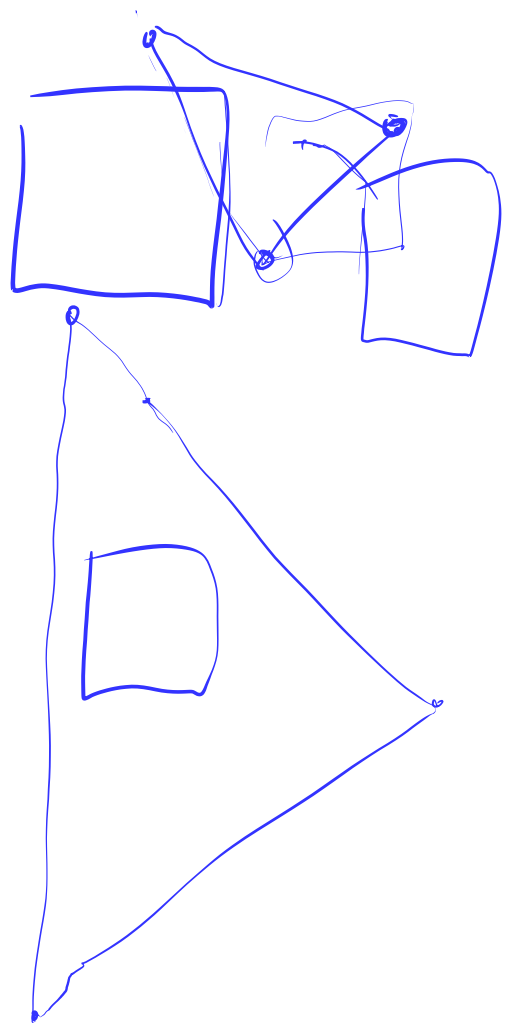
$$\text{Time} = \text{Resolution} \times \text{AA} \times \underbrace{2^{\text{nd}} \text{ ray rays}}_{\substack{\text{importance} \\ \text{sampling}}} \times \underbrace{\text{Objects}}_{\text{BVH}} \times \underbrace{\text{intersection}}_{\substack{\text{coherence} \\ \text{completeness tradeoff}}}$$

Bounding Volume Hierarchy



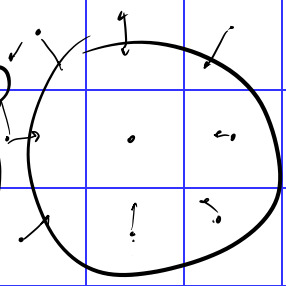
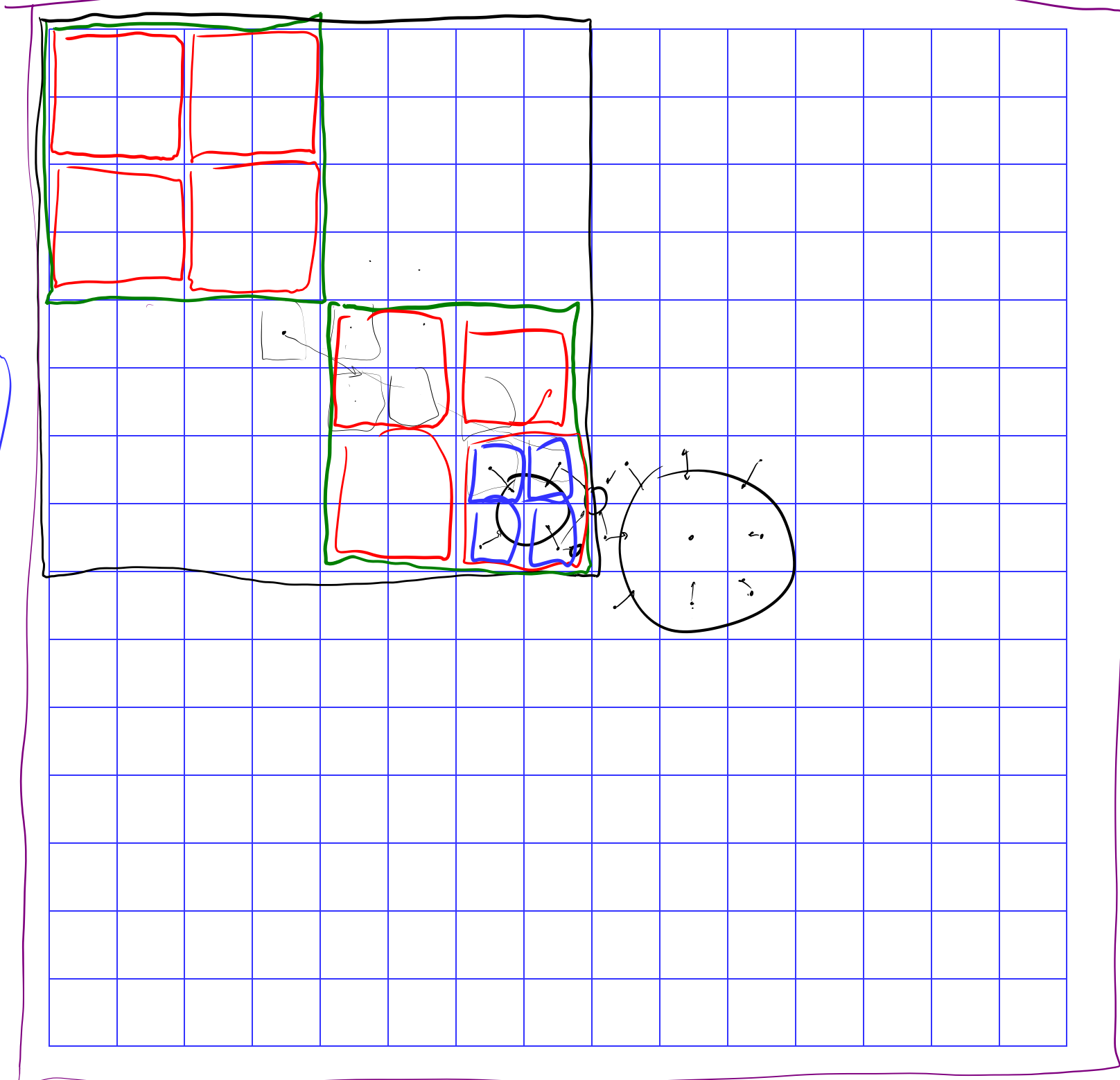
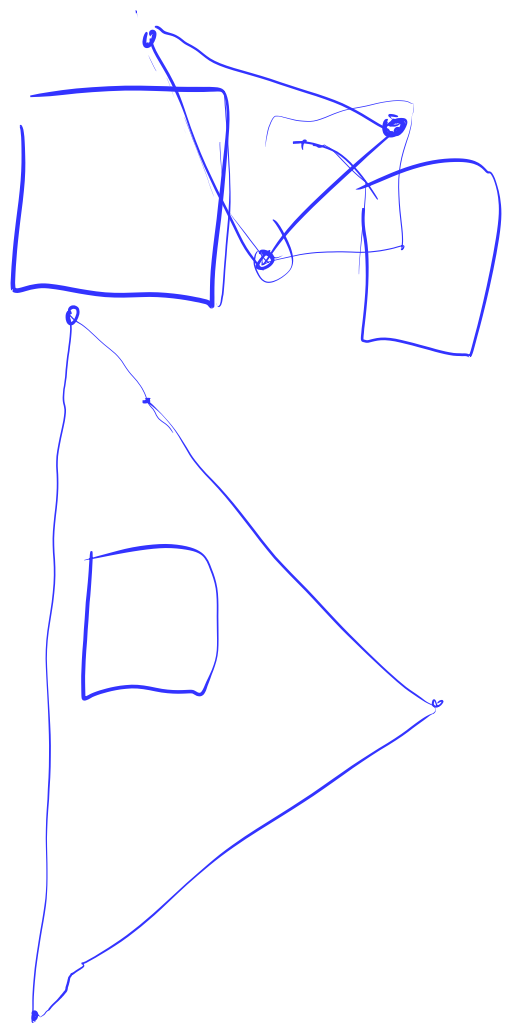
2D Quad Tree

3D Oct Tree



2D Quad Tree

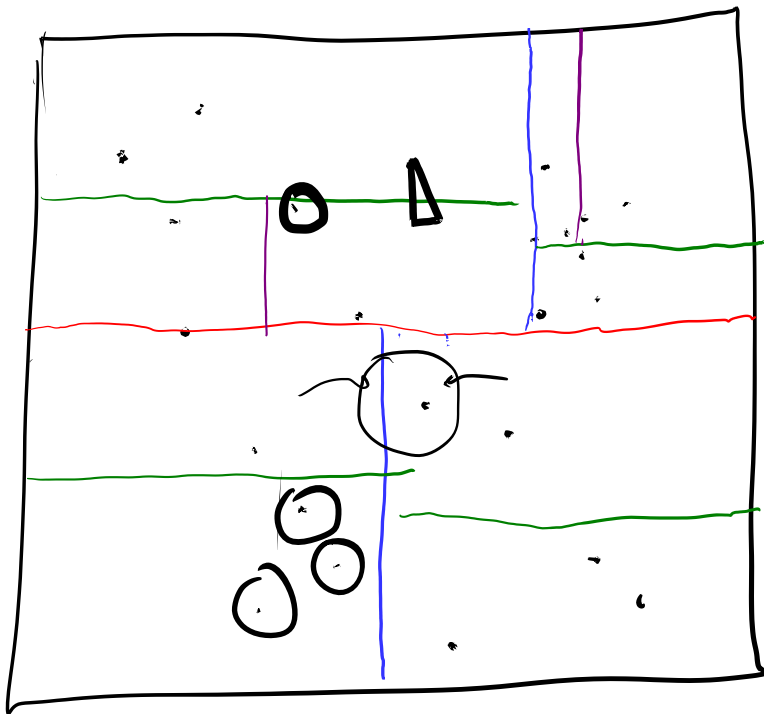
3D Oct Tree



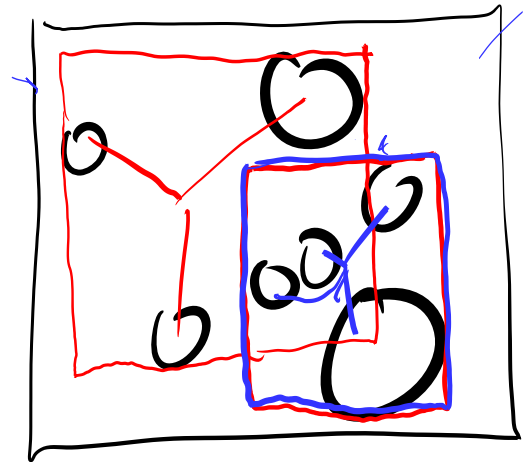
any number
↓
KD - trees

↖
dimension

2
→



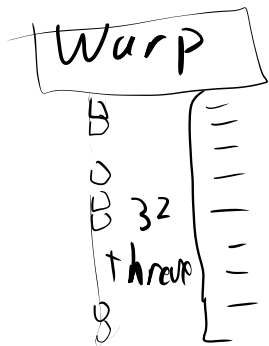
R-trees



Ray coherence

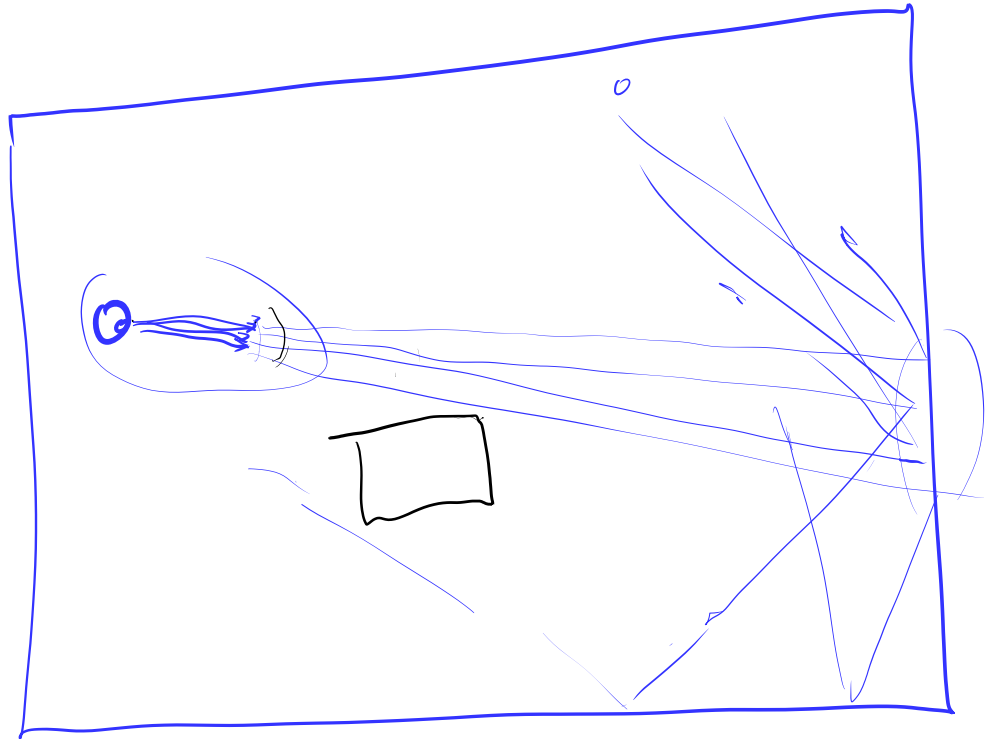
Cache, prediction

GPU



run same code
in lock-step

```
if (            ) {  
              
}  
else {  
              
}  
while ( )
```



if ()

if ()

if ()

if ()

if ()