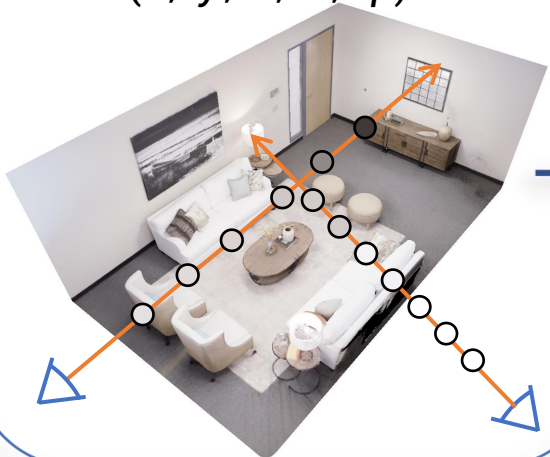


## 5D Input

Position + Direction  
( $x, y, z, \theta, \phi$ )



$F_{\Theta}$

## Output

Intrinsic Neural Radiance Fields

$\sigma$ : density

$sl$ : semantic logits (optional)

$r$ : reflectance

$s$ : shading

$re$ : residual

$c$ : color



$\times$



$+$



$=$



## Loss

Unsupervised  
Prior Guidance

Reflectance  
Clustering

Color  
Supervision

Semantic  
Supervision