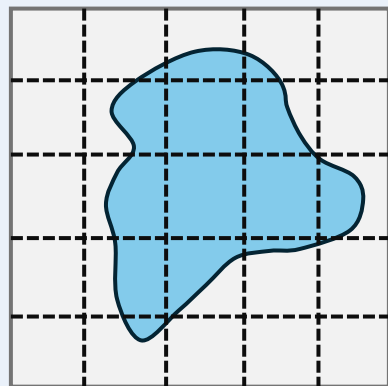
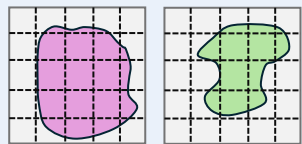


## Data Preparation

Training Shapes  
(in Normalized Scale)



...



Local Shapes  
(in Local Voxels)



Voxel-  
based  
Partition



Local Shapes  
w. Coordinate Frames



Coordinate  
Field  
Initialization

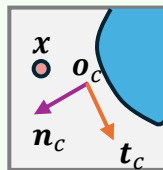


## Model

### Train

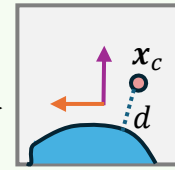
Point  $x$   
(World Coordinate)

Local Shape  
Cell  $c$   
(Zoom-in)



Re-orient

Transformed Point  $x_c$   
(Aligned Coordinate)



Prediction

$x_c$   
 $z_c$

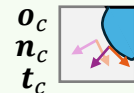
MLP

sdf  $\xleftrightarrow{\text{loss}}$   $d$

Optimized Parameters

MLP

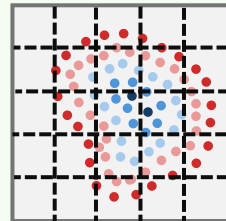
$z_c$



### Inference

Test Points  
w. SDF values

● outside  
● inside

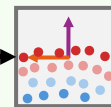


Partition  
& Init.



Cell  $c'$

Re-orient



Prediction

$p_{c'}^i$   
 $z_{c'}$

MLP

sdf

update

Optimized  
Parameters

$z_{c'}$

