

## NICE-SLAM

## Neural Implicit Scalable Encoding for SLAM

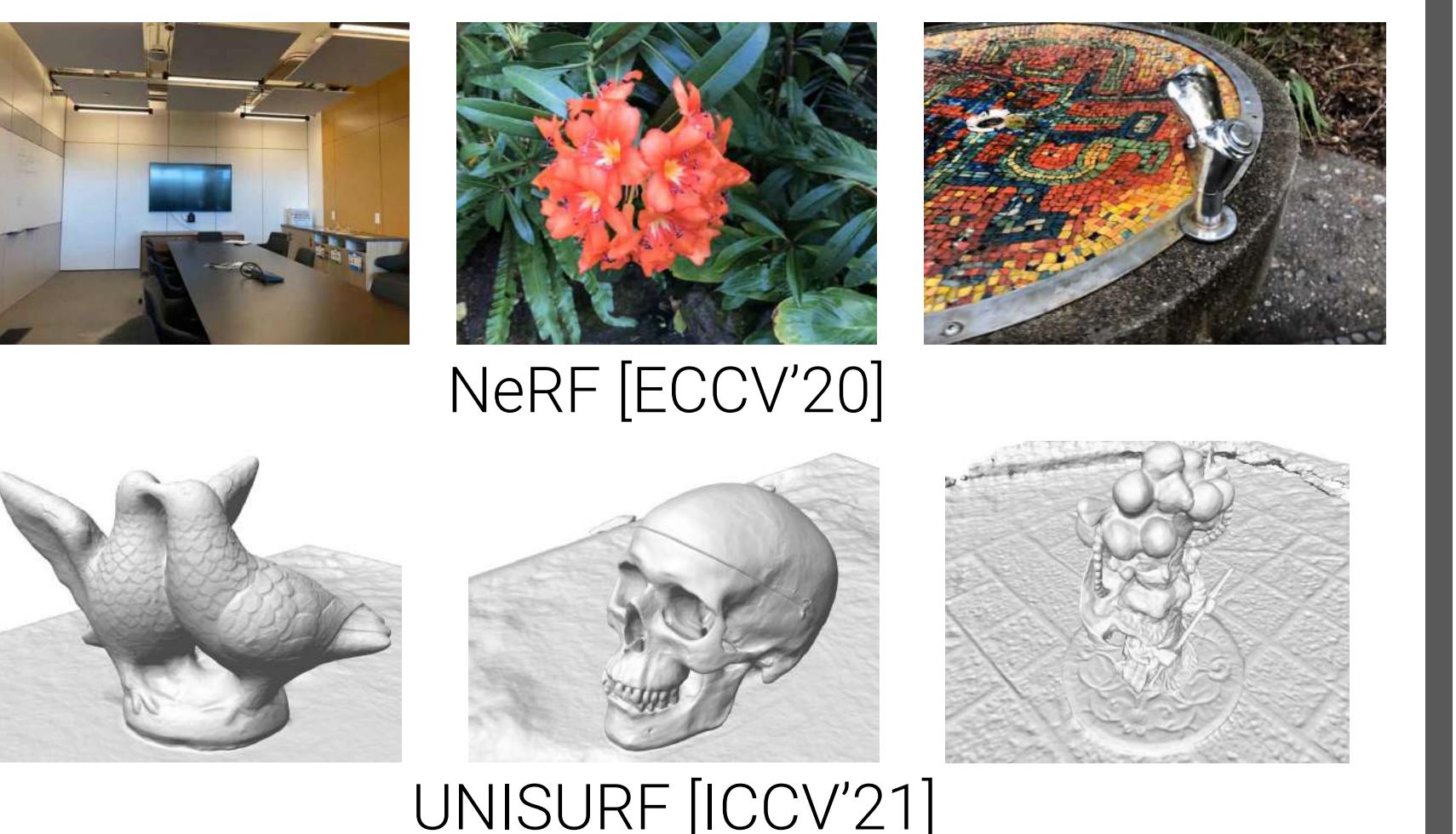
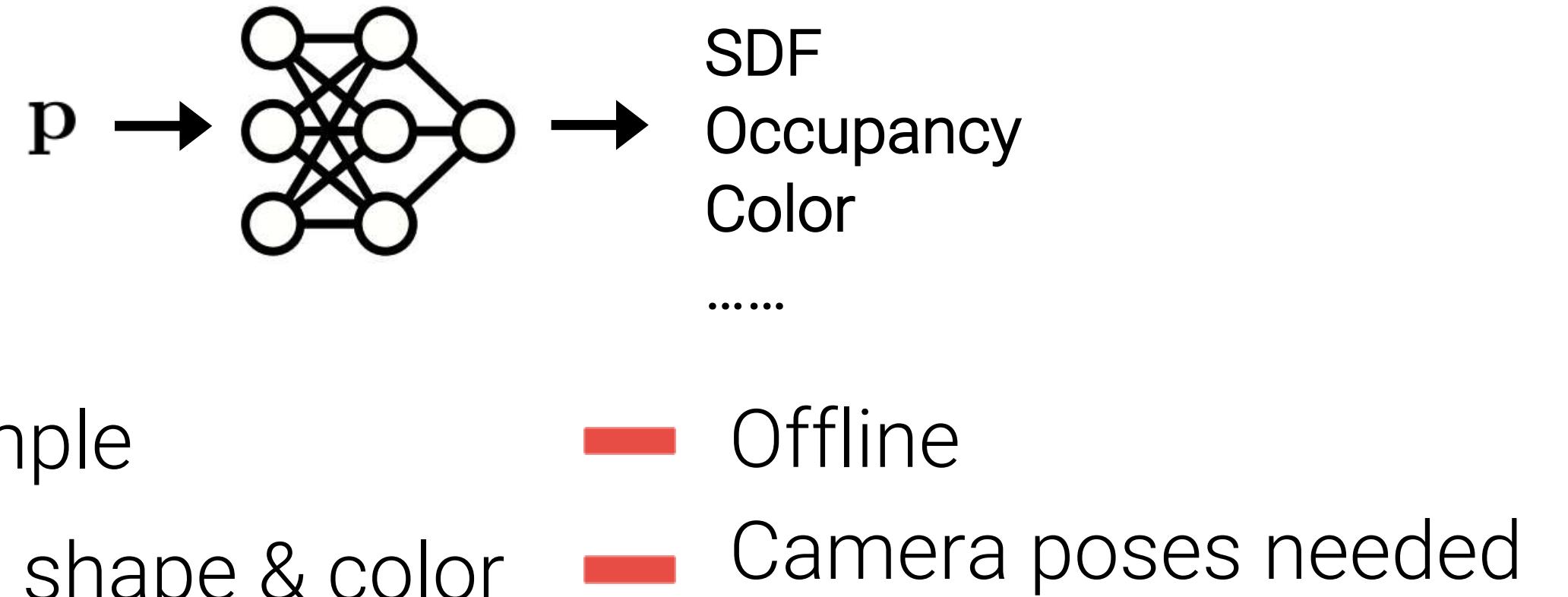
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 \* equal contributions



Paper, code, and video are available at  
[pengsongyou.github.io/nice-slam](https://pengsongyou.github.io/nice-slam)

## 1. Motivation

**Neural implicit representations** are awesome!



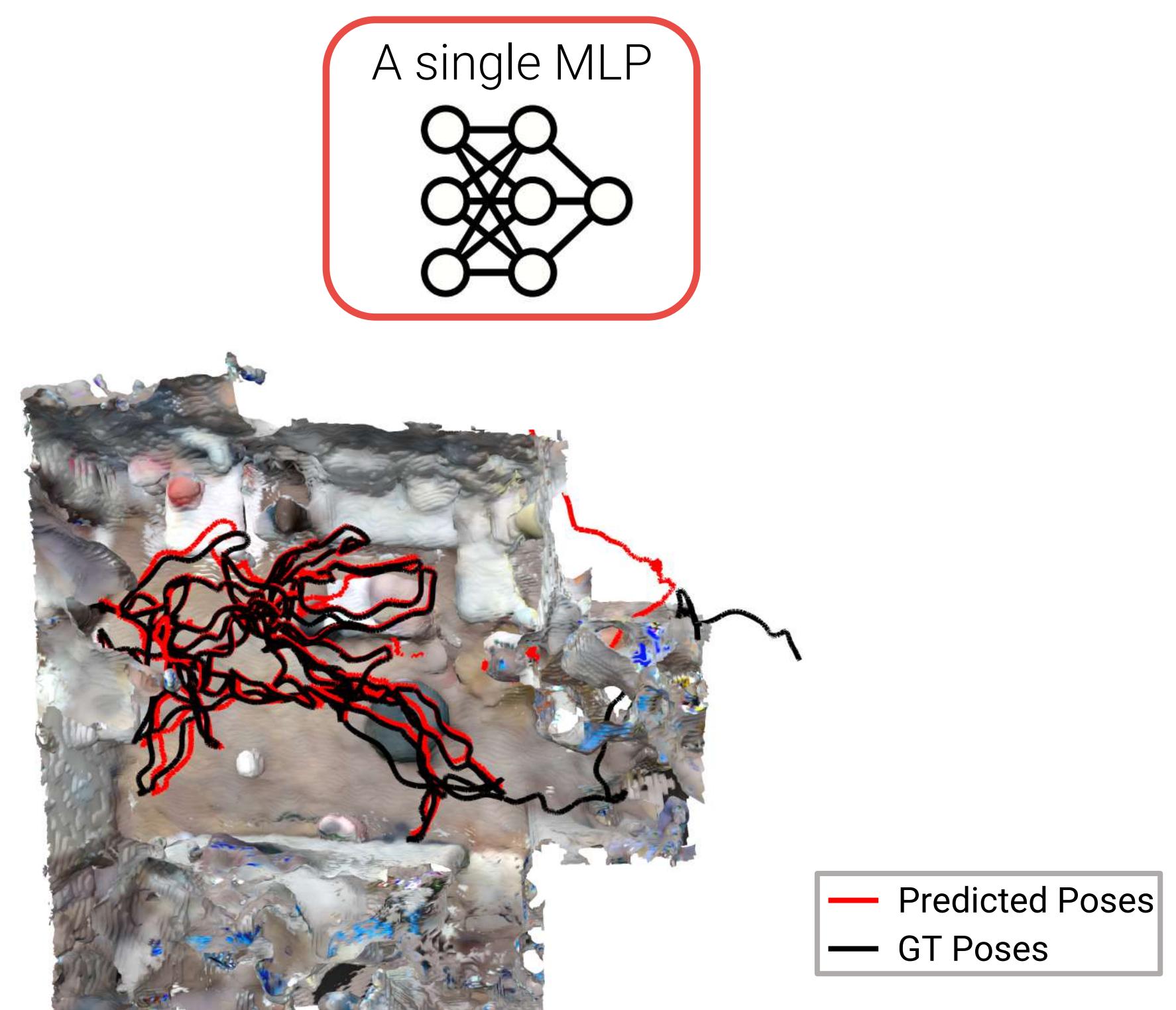
## 2. Goal

**Input:** an RGB-D sequence for large-scale indoor scenes

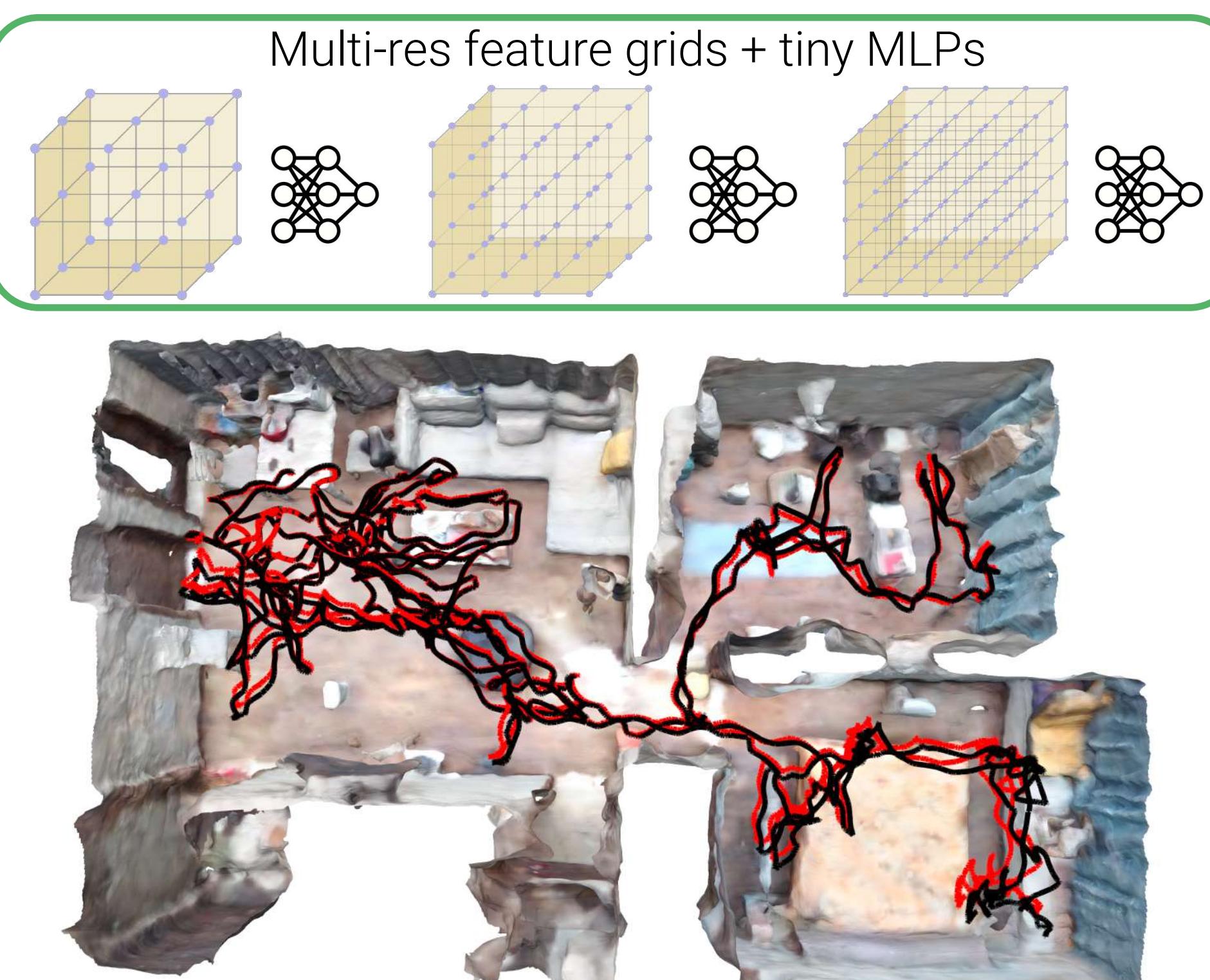


**Output:** On-the-fly learn neural implicit surfaces & camera poses

iMAP [ICCV'21]

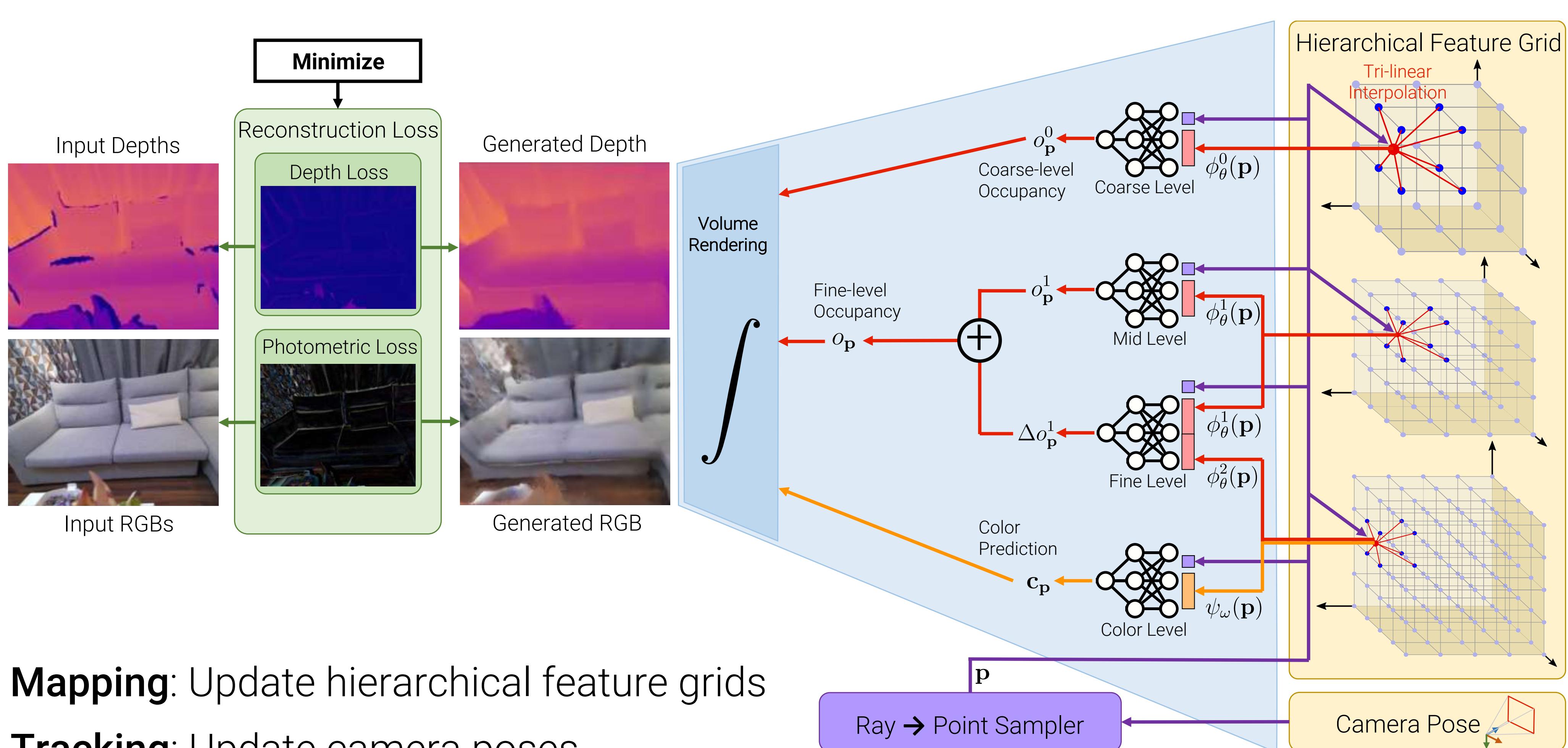


NICE-SLAM



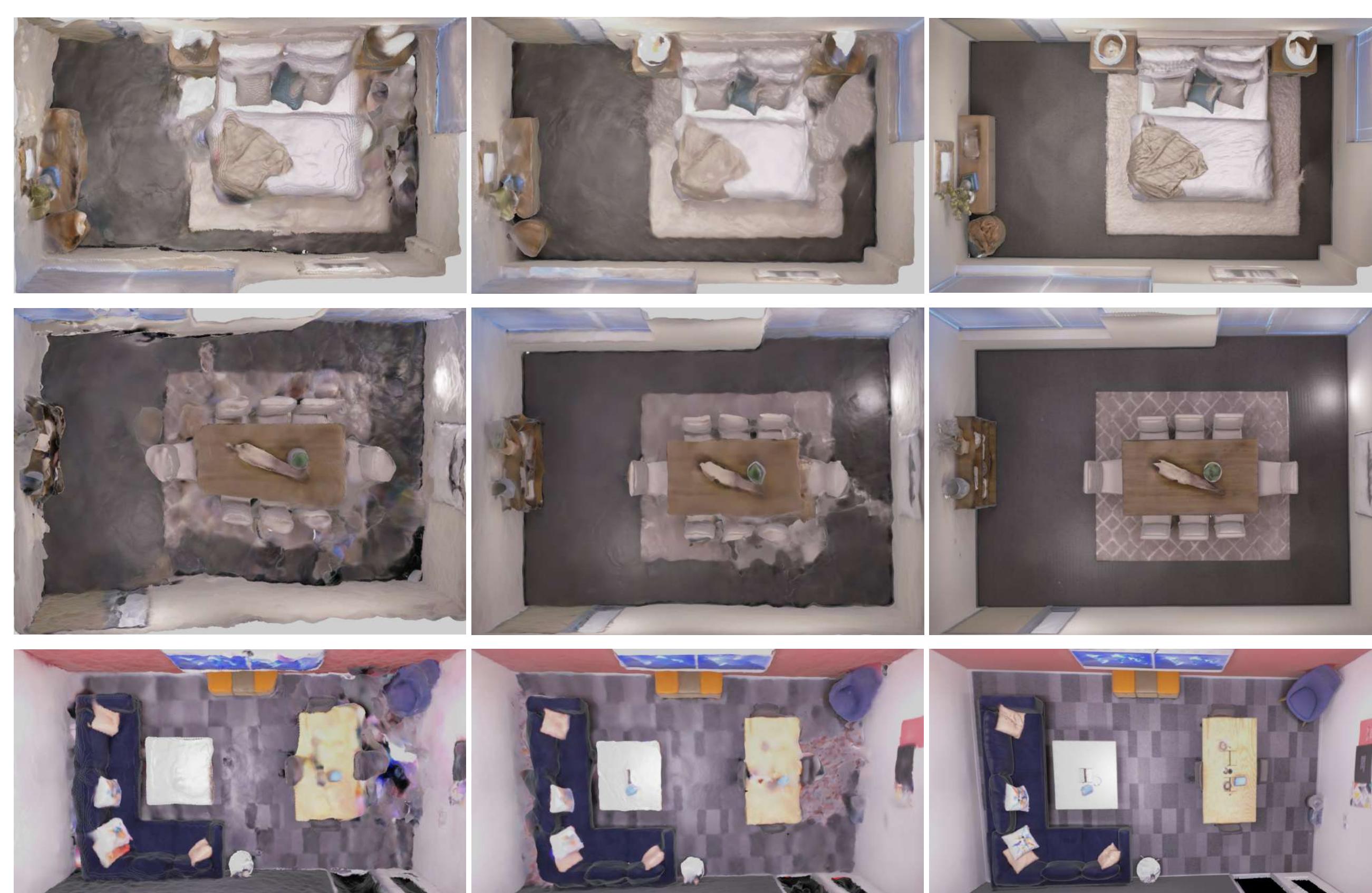
- Fail to scale up to larger scenes
- Catastrophic forgetting
- Slow convergence

## 3. Pipeline

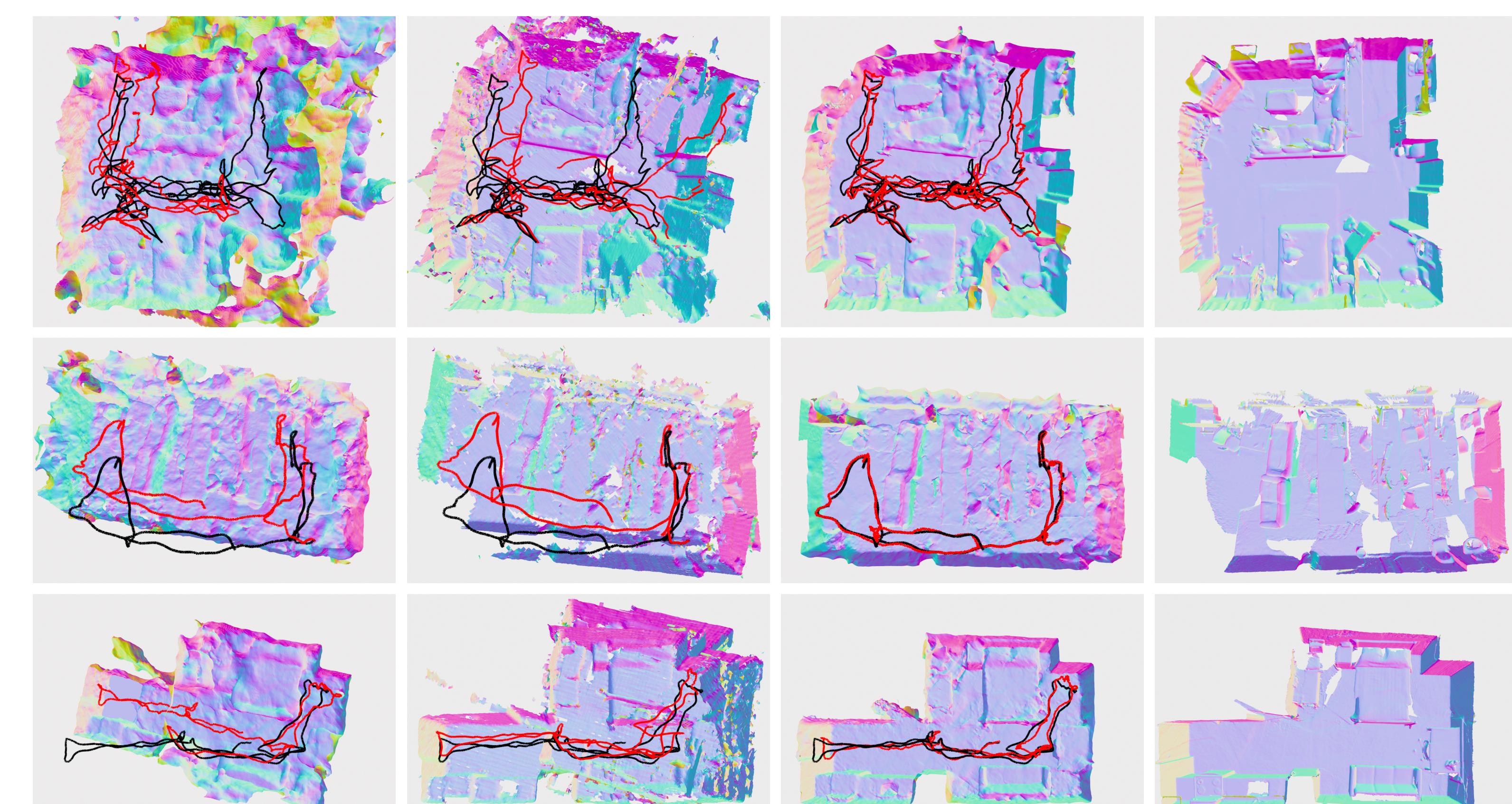


## 4. Results

Replica

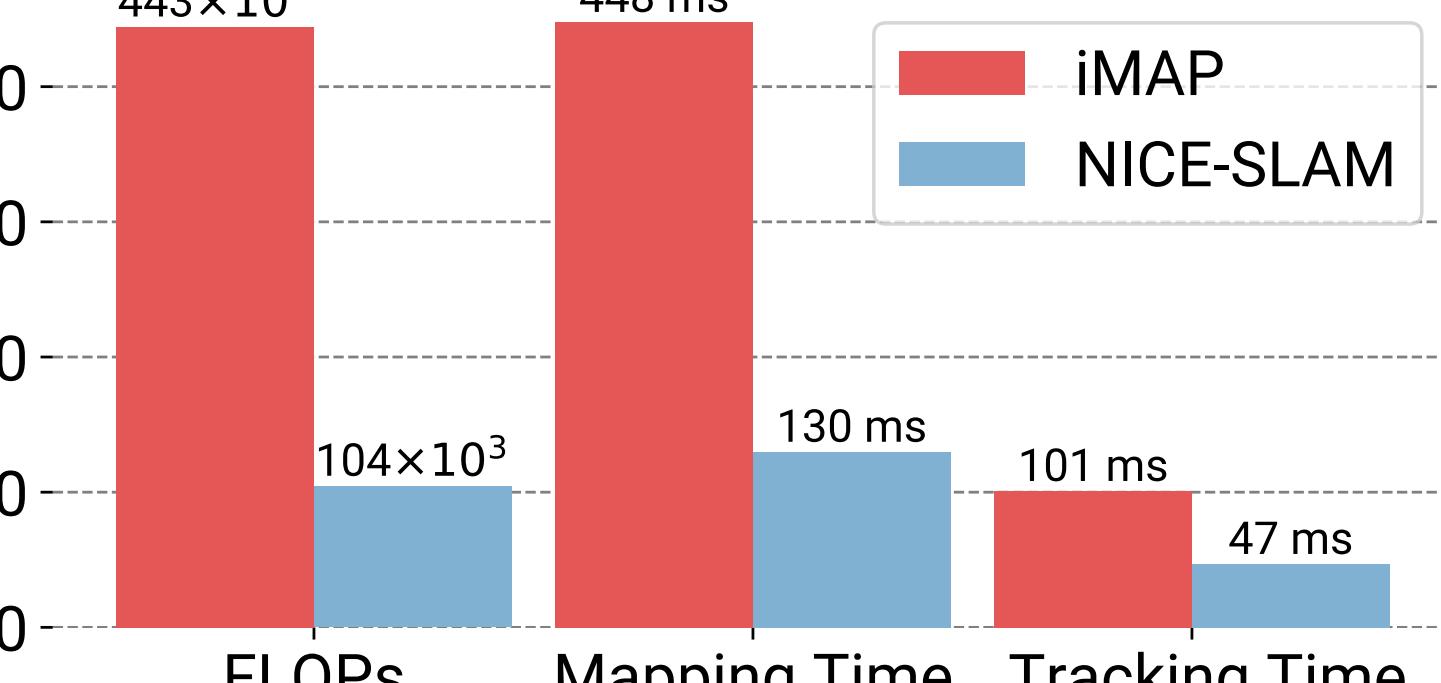


ScanNet



## 5. More Studies

## Computation &amp; Runtime



## Ablation Study

