

## Abstract

- Depth Completion using 3D landmarks from a SfM or SLAM pipeline
- Introduce the SparseFormer that fuses 3D points with deep visual features to produce dense depth.

## Related work

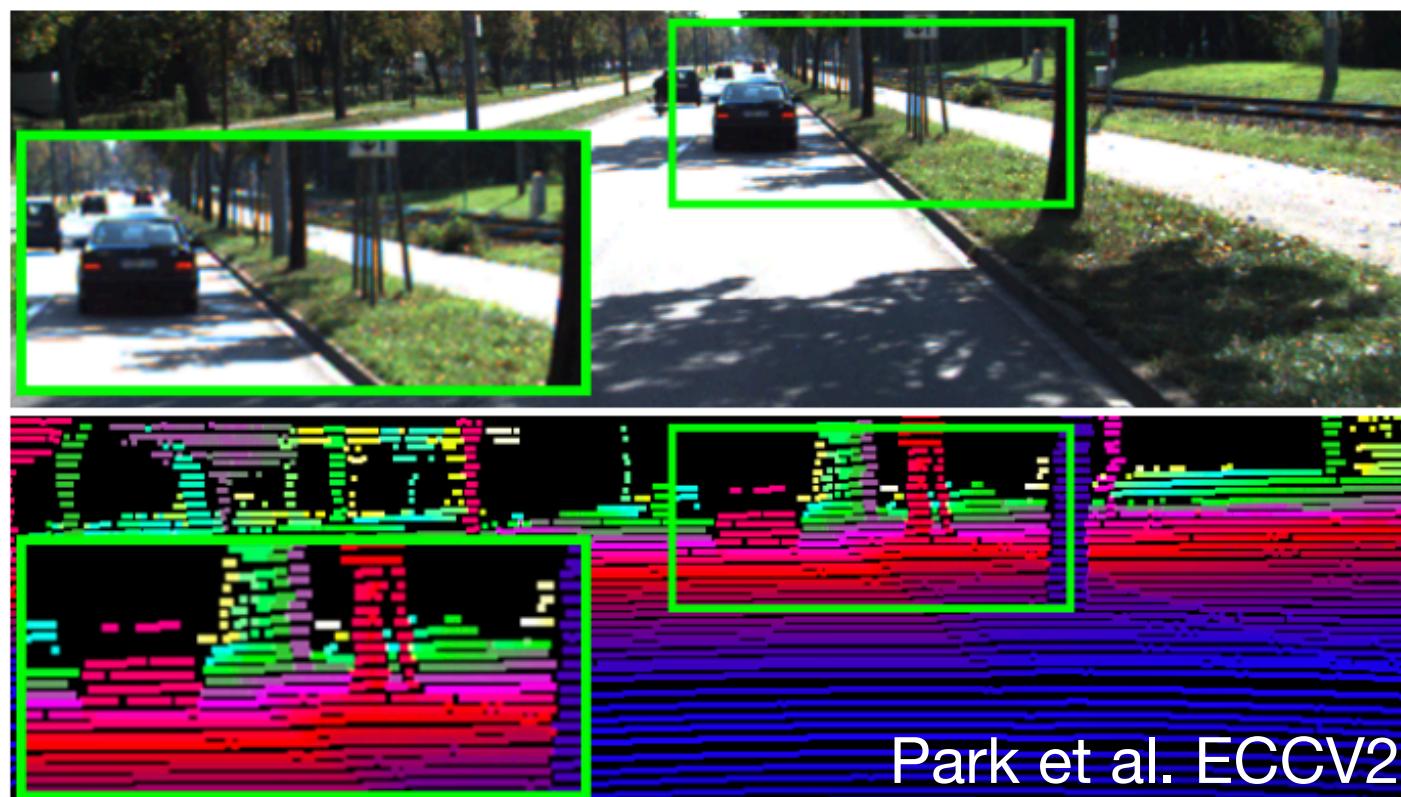
### Semi-Dense, e.g. Kinect / RealSense

- $\approx 80\%$  of pixels have depth
- Big holes with missing depth



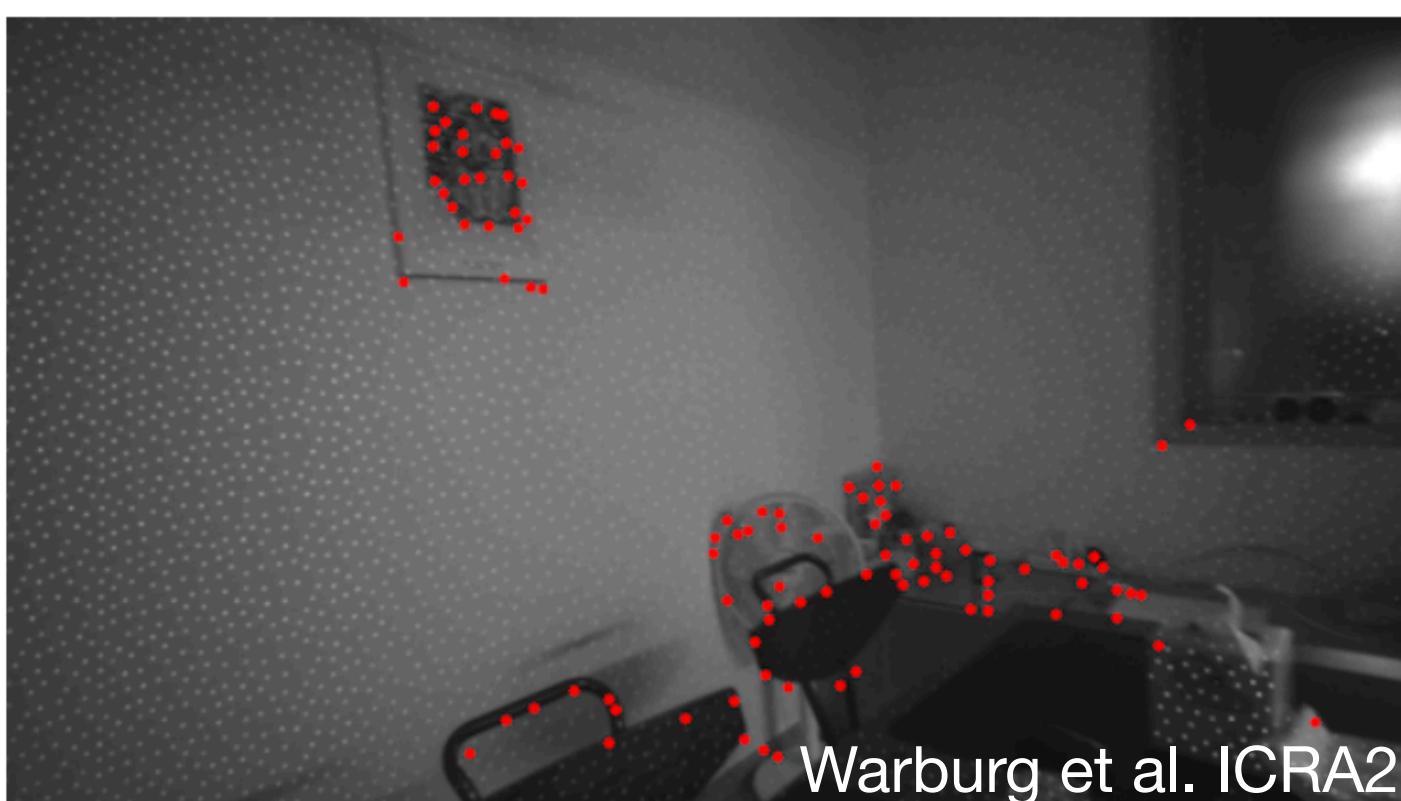
### Sparse, e.g. LiDAR

- $\approx 10\%$  of pixels have depth
- Uniformly distributed

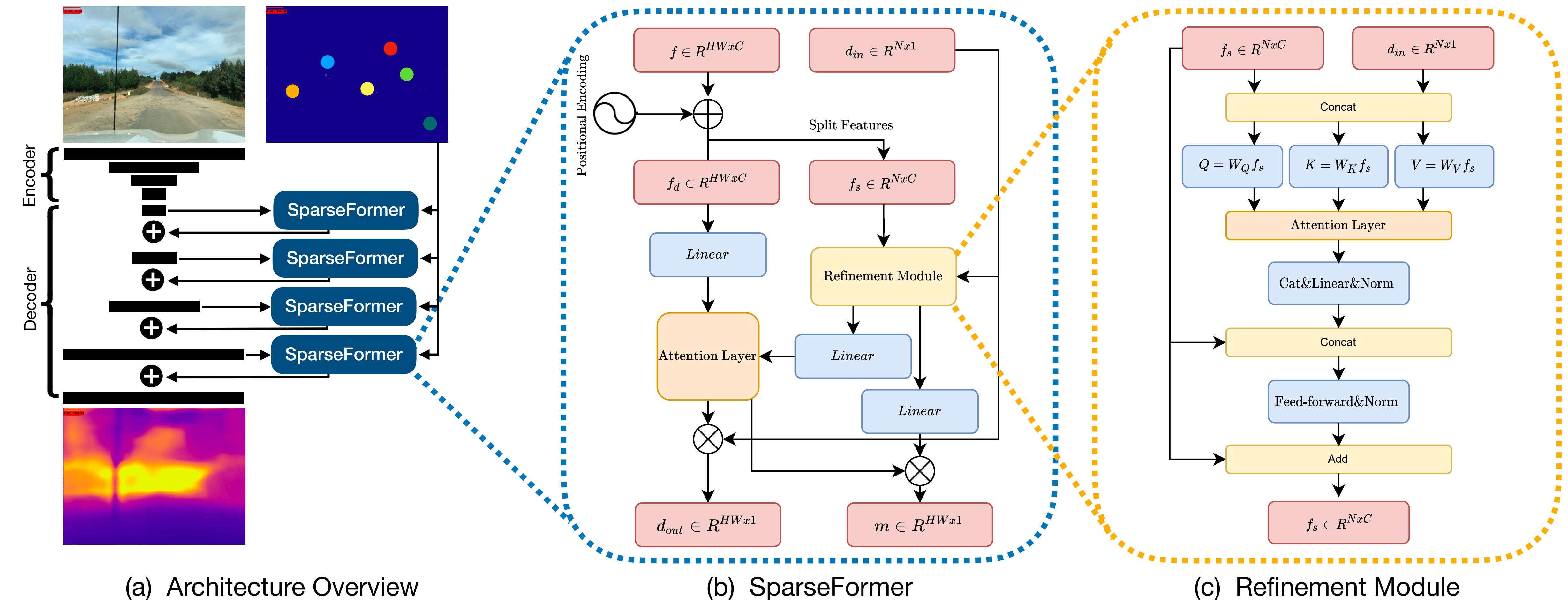


### Very sparse, e.g. SfM landmarks

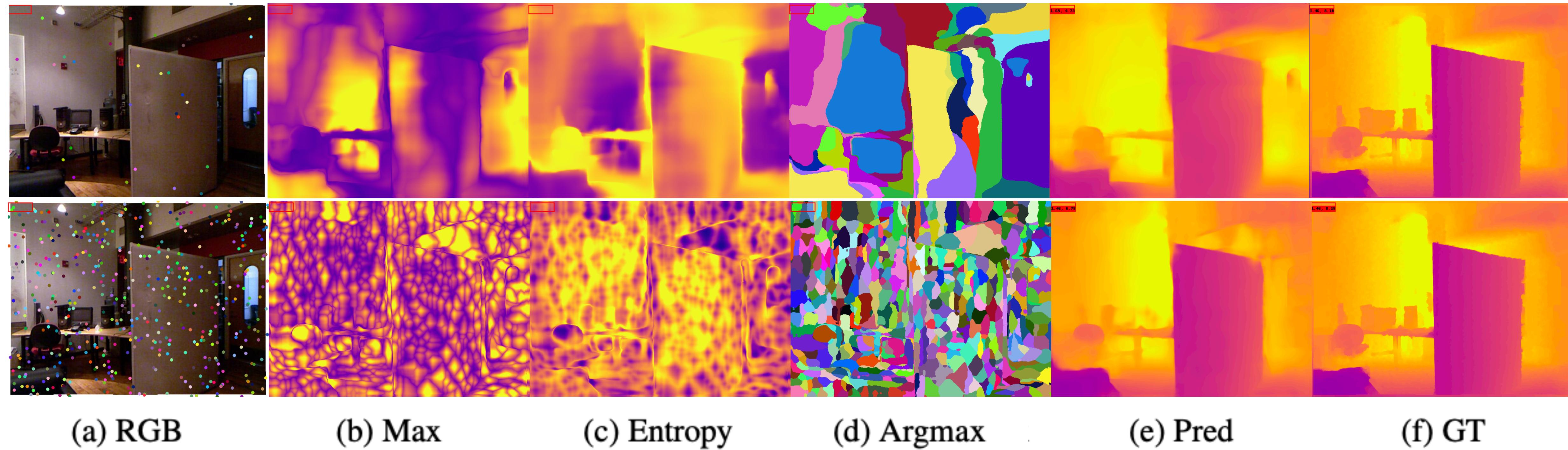
- < 0.1% of pixels have depth
- Non uniformly distributed



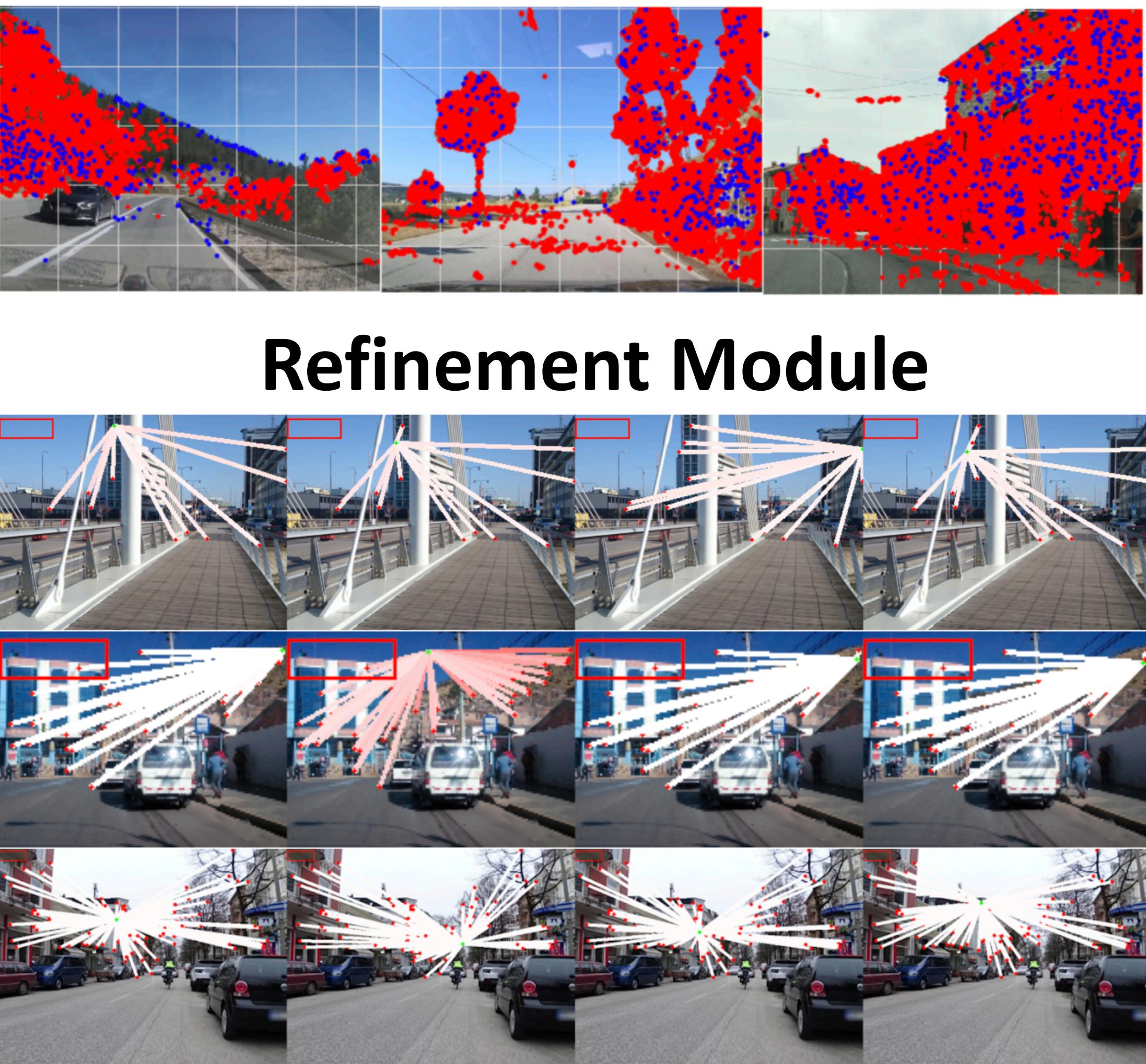
## Model Overview



## Qualitative results



## Mapillary Planet-Scale Depth



## Results

