Early Fusion

With Collaboration - 2 agents

Training -Stage | **Inference - Stage**

First Frame

3DGS | Static Gaussian

GT -Pred - L2Loss

Lidar Initialization

RGB - CAV-2
Pose -CAV-1

RGB - Ego Car
Pose Ego Car

RGB - CAV-2
Pose -CAV-2

1-20 frames (20 S)

RT-4DGS (Baseline)

GT -Pred - L2Loss

RGB - CAV-2
Pose -CAV-1

RGB - Ego Car
Pose Ego Car

RGB - CAV-2
Pose -CAV-2

4DGS - Pointcloud

RT-4DGS (Baseline)

Ground Truth | 4D - Reconstruction | Rendered Depth

V2X Agent 1

Ego Car

V2X Agent 2
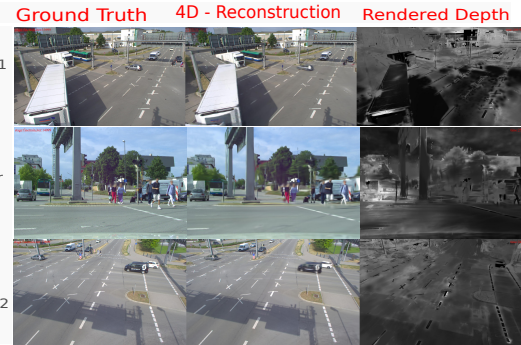
Without Collaboration - Only Ego Car

Training -Stage | **Inference - Stage**

1-20 frames (20 S)

Static Gaussian

RT-4DGS (Baseline)

GT -Pred - L2Loss

RGB - Ego Car
Pose Ego Car

4DGS - Pointcloud

RT-4DGS (Baseline)

Ground Truth | 4D - Reconstruction | Rendered Depth

V2x Agent 1
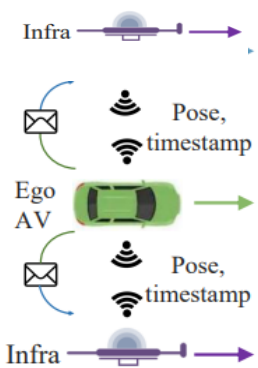
Ego Vehicle Still under training2

V2X Agent 2

■ Assumption, a pre-trained static gaussian is already available in the car,
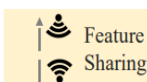
Dinov2 Feature Fusion

I dont know if i am righjt here, Diffusion based gaussian iis very diifcult fr me now

Dinov2 features - With Collaboration (2 agents)

Training Stage

Infra →

Dino Features

DINOv2

Pose, timestamp

Ego AV

DINOv2

Pose, timestamp

Infra →

DINOv2

V2X metadata sharing

Feature Sharing

Feature decoder

Static Gaussian

1-20 frames (20 S)

RT-4DGS (Baseline)

GT -Pred - L2Loss

CAV-1 FMAP
Pose -CAV-1

RGB - Ego Car
Pose Ego Car

CAV- 2 FMAP
Pose -CAV-2

4DGS - Pointcloud

Stupid Idea - Dont know if would work or not, dont know how to make this work

■ Assumption, a pre-trained static gaussian is already available in the Ego car

Coding this is difficult,