

# Neural Residual Radiance Fields for Streamably Free-Viewpoint Videos

Liao Wang<sup>1,3</sup>, Qiang Hu<sup>1</sup>, Qihan He<sup>1,4</sup>, Ziyu Wang<sup>1</sup>, Jingyi Yu<sup>1</sup>  
Tinne Tuytelaars<sup>2</sup>, Lan Xu<sup>1†</sup>, Minye Wu<sup>2†</sup>

<sup>1</sup>ShanghaiTech University, <sup>2</sup>KU Leuven, <sup>3</sup>NeuDim, <sup>4</sup>DGene

TUE-AM-008



上海科技大学  
ShanghaiTech University



NeuDim

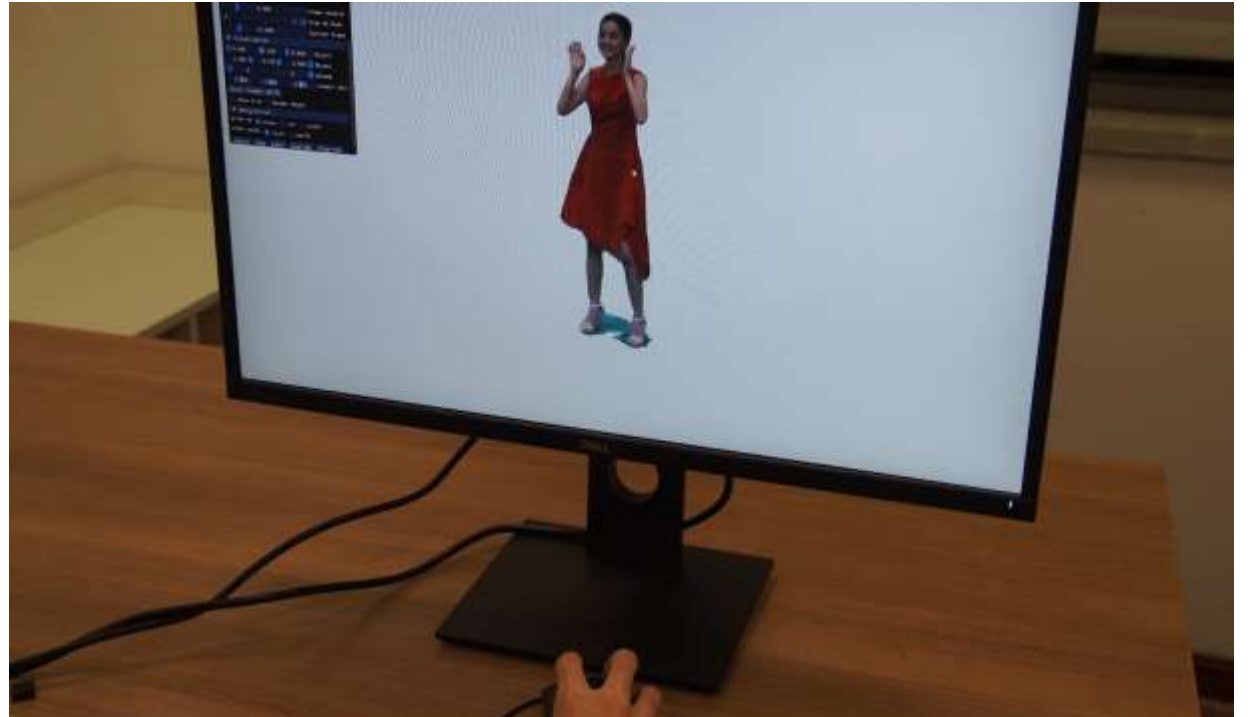


DGene

# Motivation

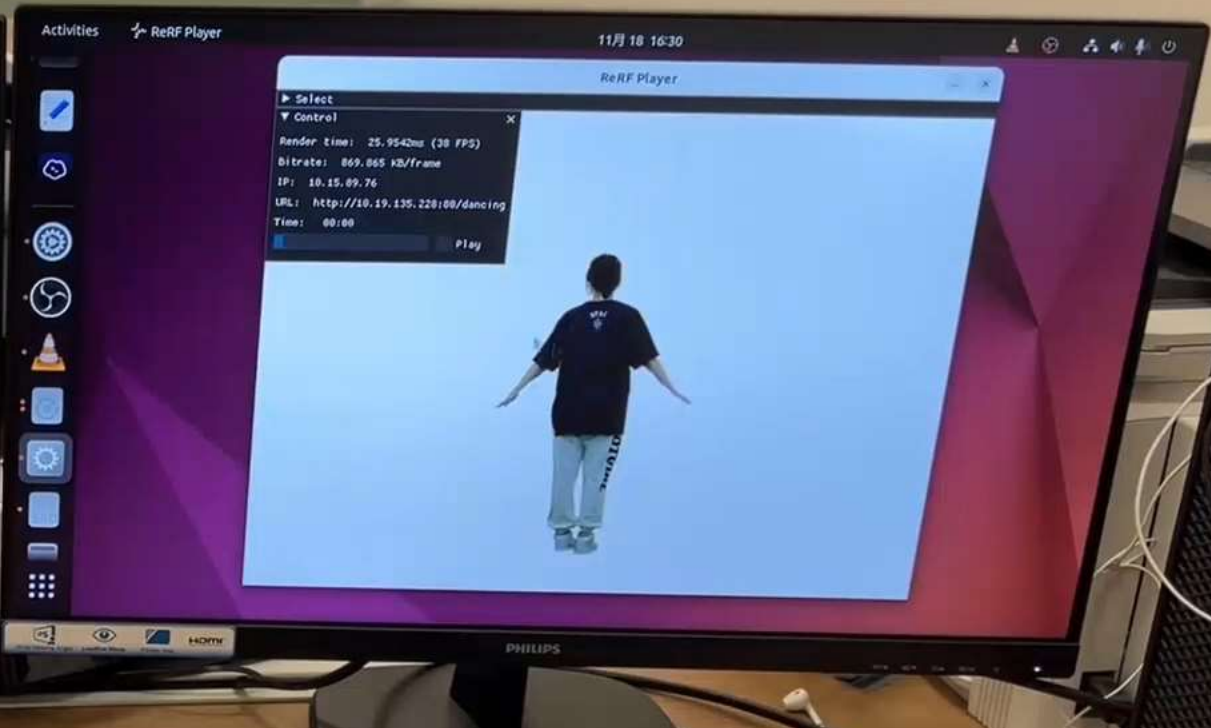
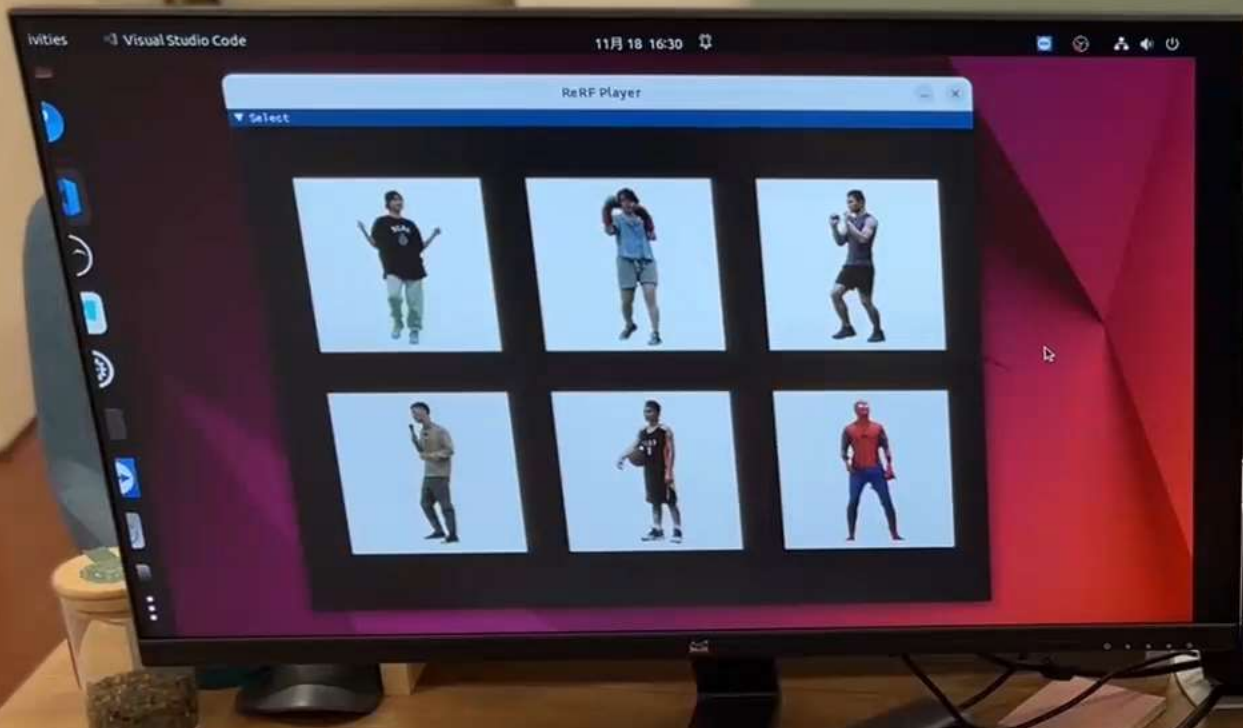
Recent dynamic radiance field rendering is restricted to:

- Short sequences without challenging motions
- Offline rendering

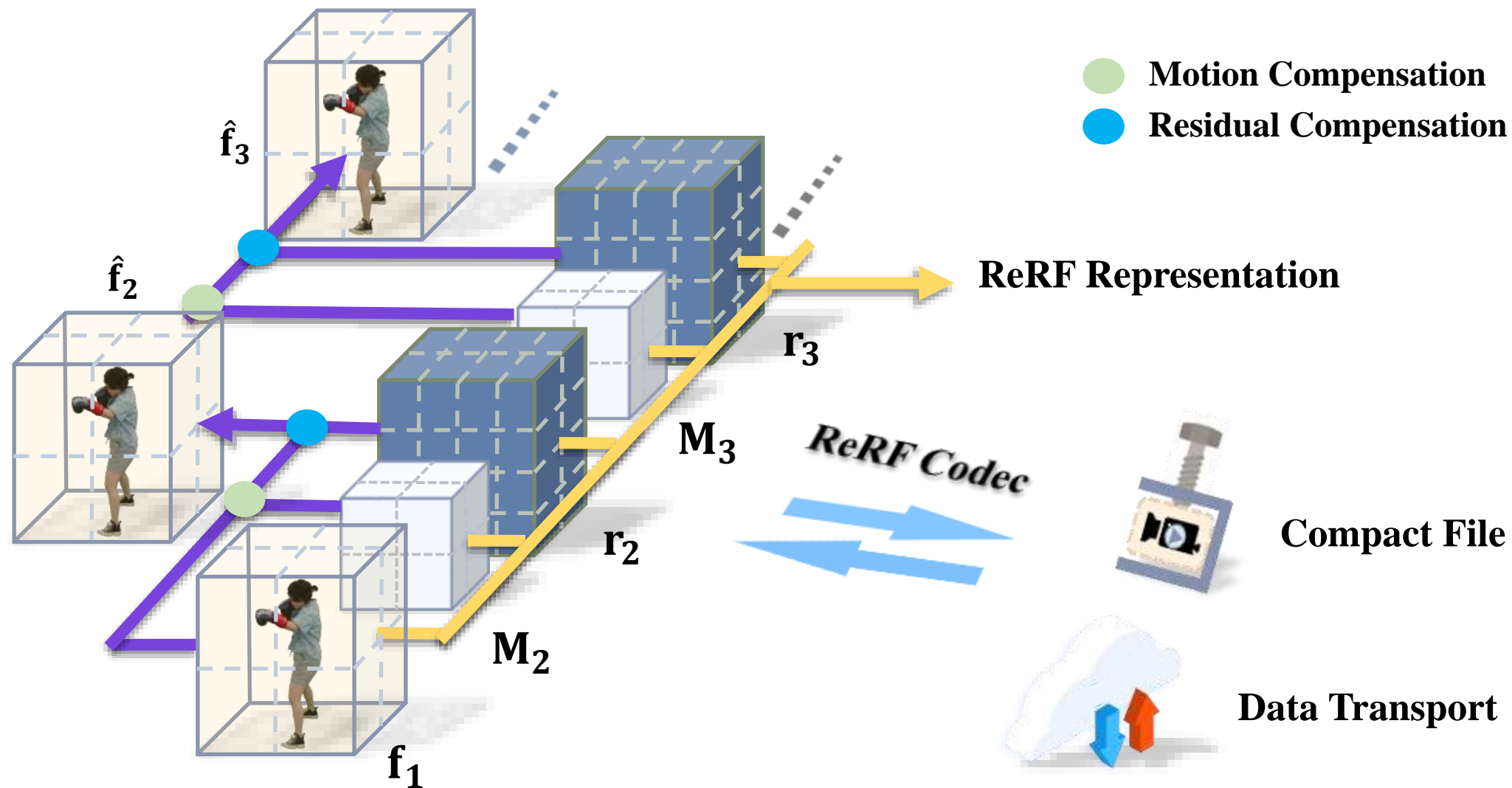


# Our solution: ReRF

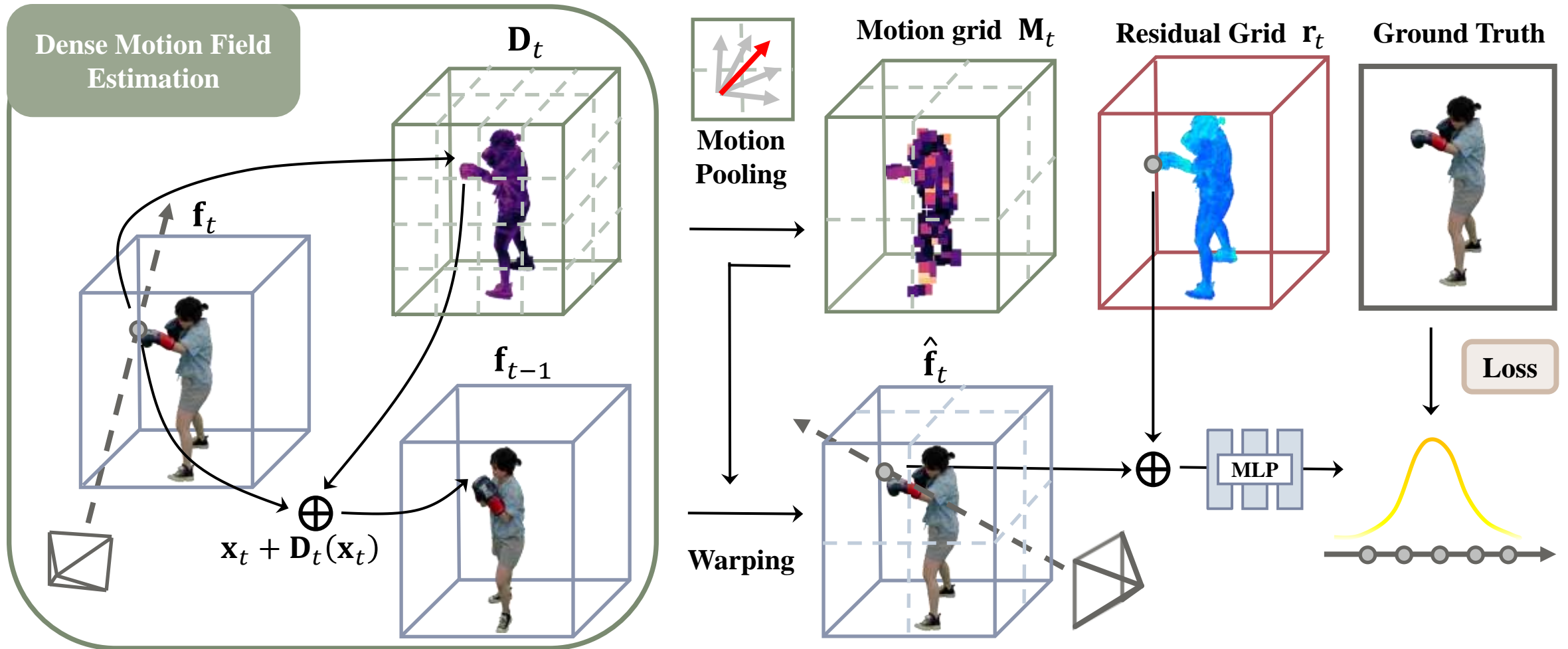
- **Streamable** free-viewpoint viewing for dynamic radiance fields
- **High compression rate** with high rendering quality
- **Long sequences with large motions**



# Overview

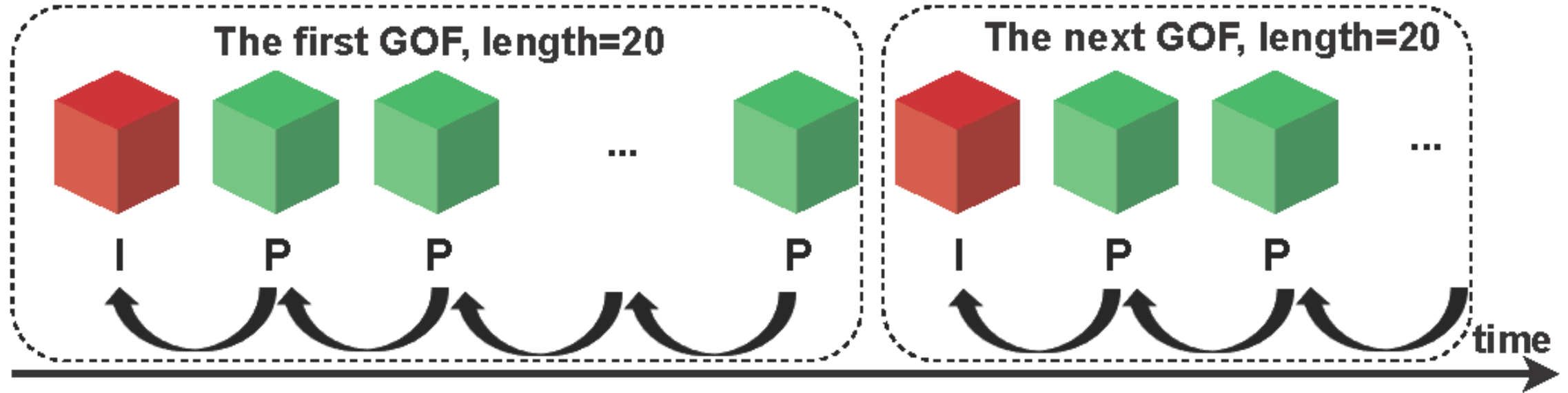


# Neural Residual Radiance Field (ReRF)

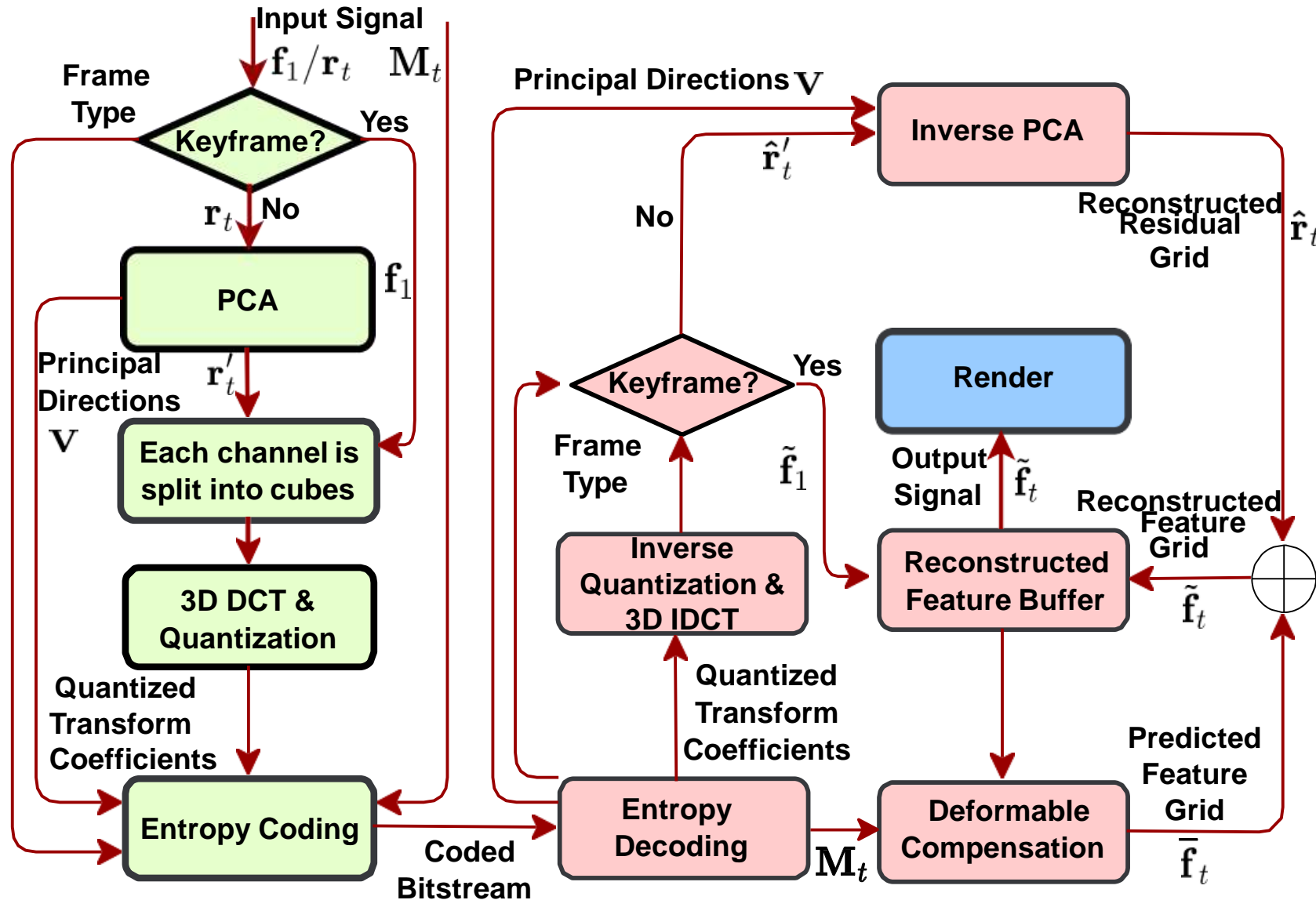




# Groups of Feature Grids (GOF)

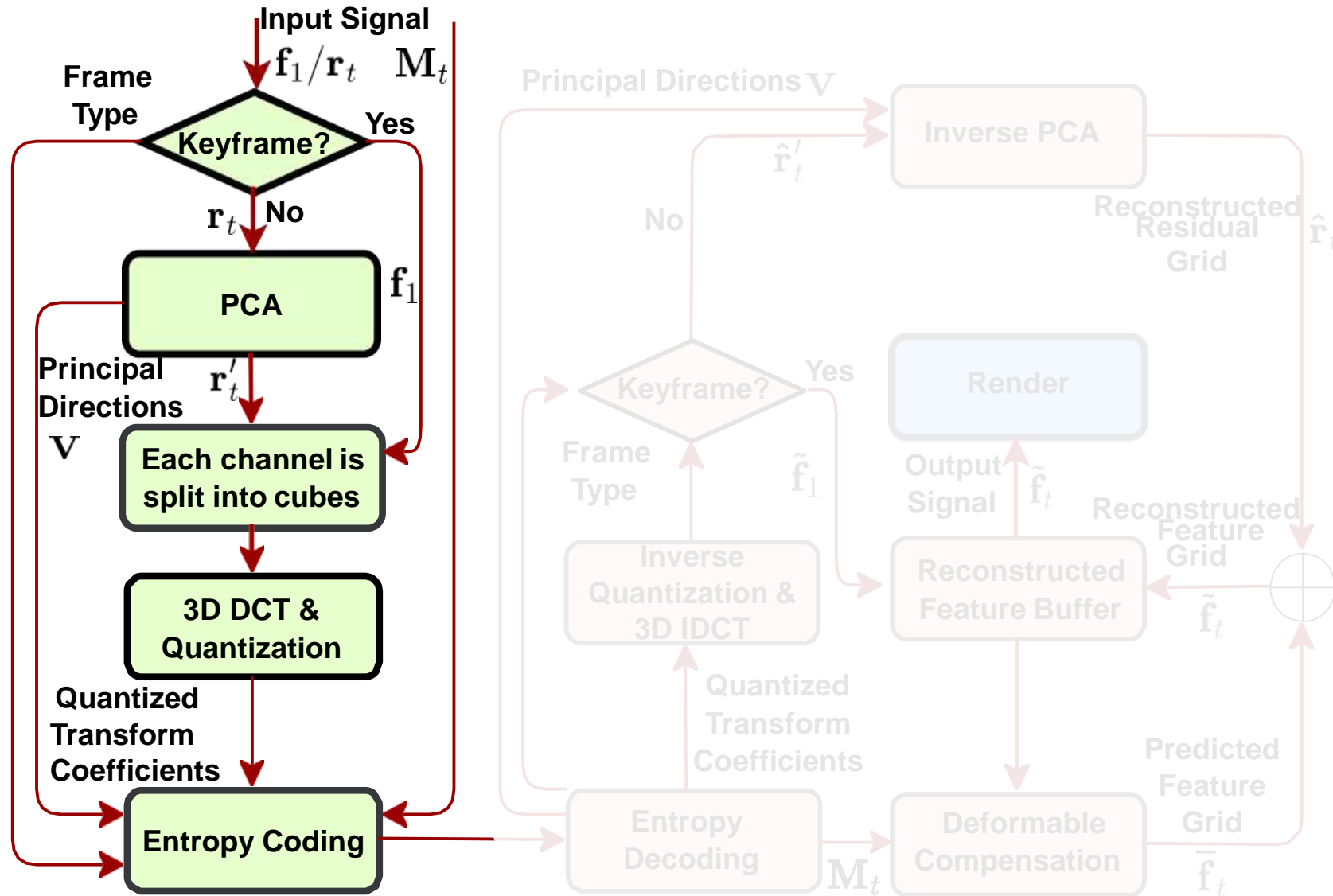


# ReRF-based codec scheme

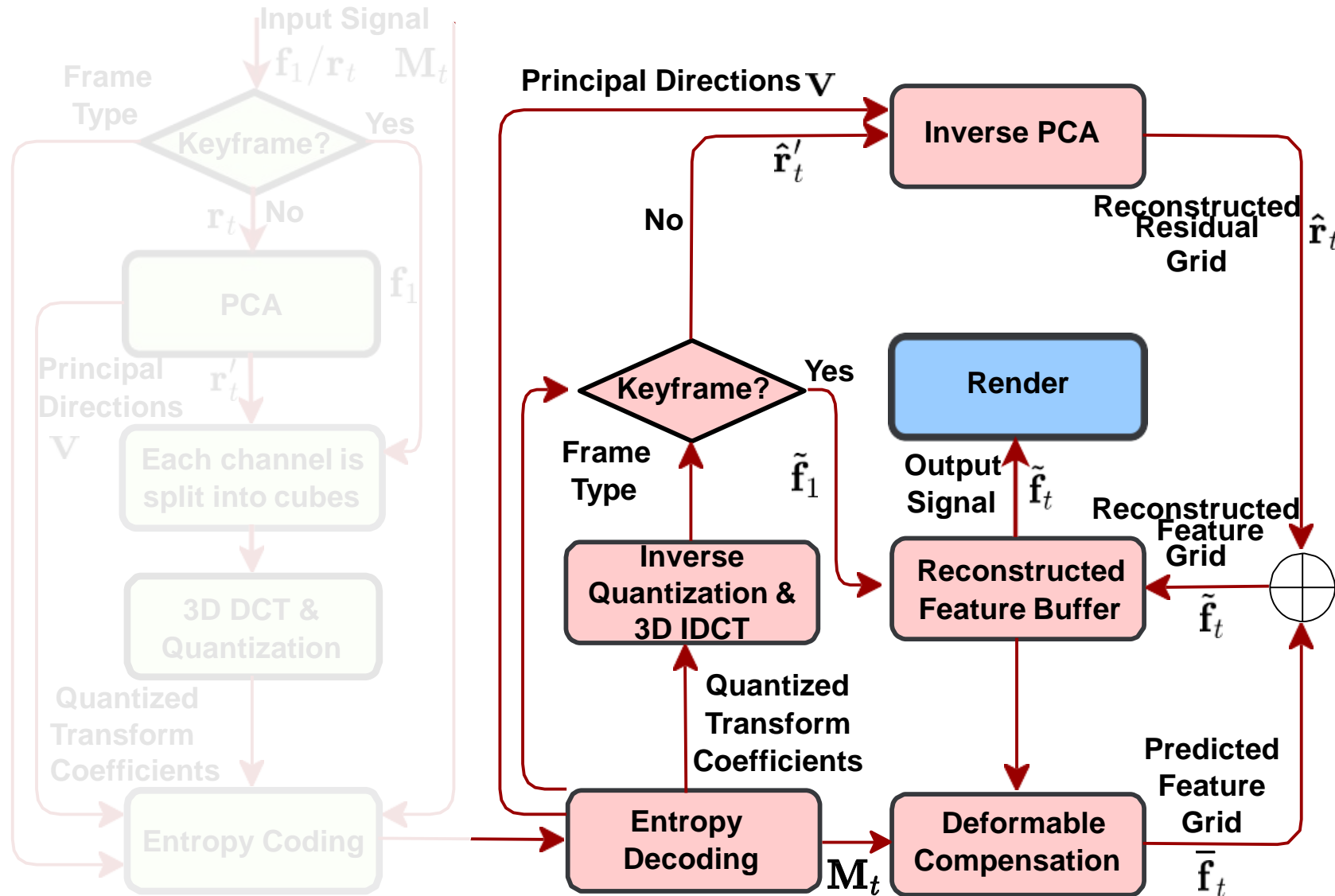




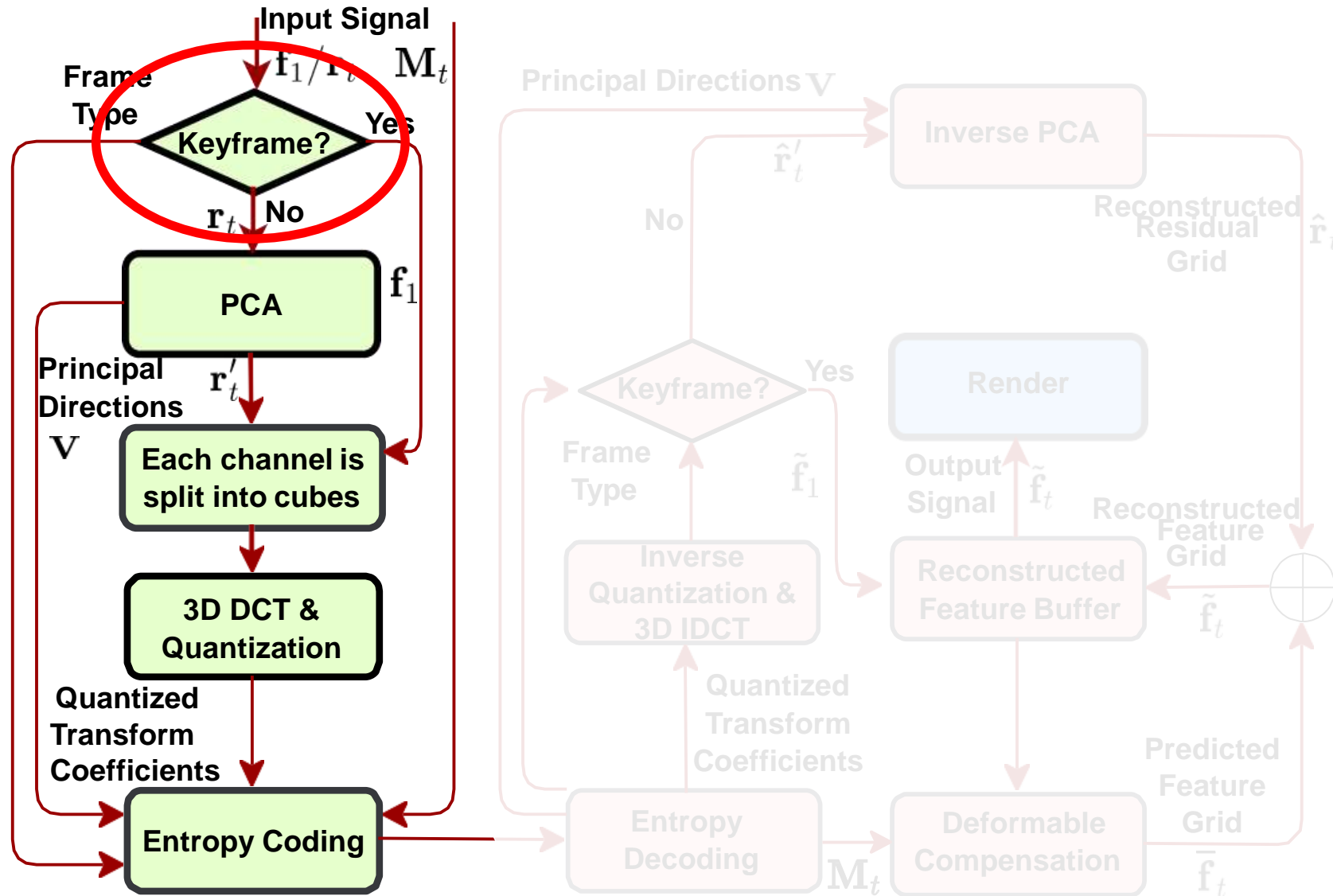
# ReRF-based codec scheme



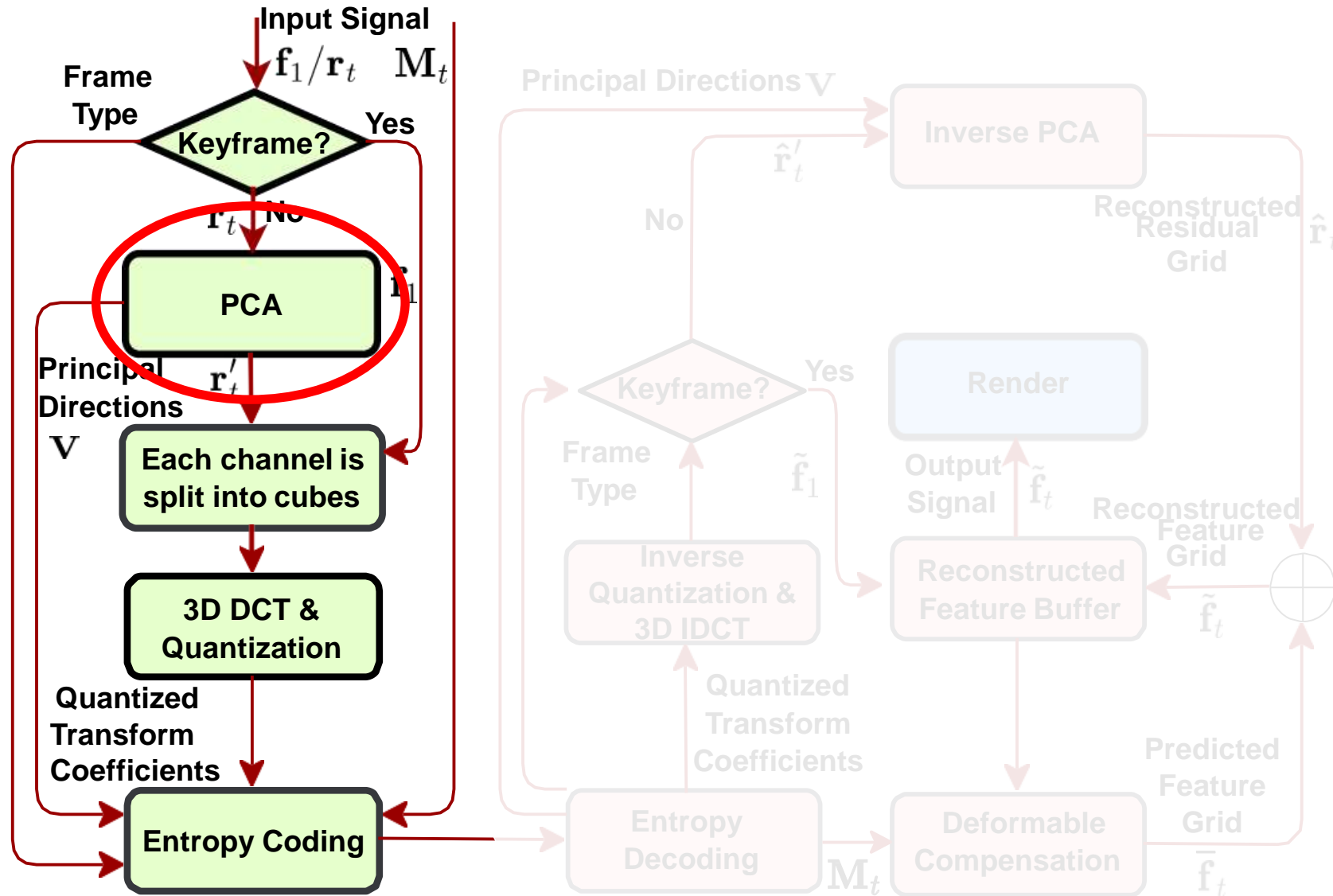
# ReRF-based codec scheme



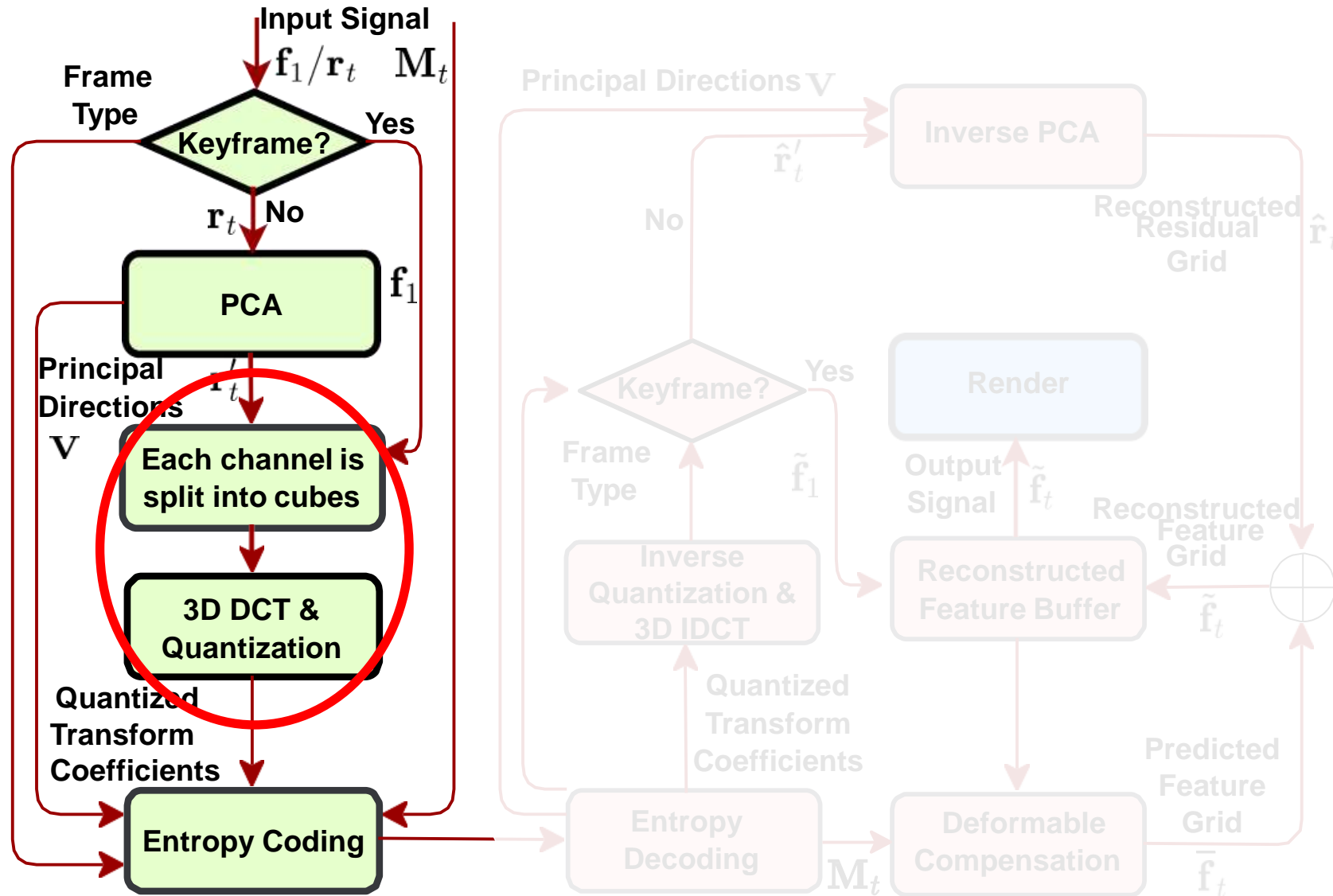
# ReRF-based codec scheme



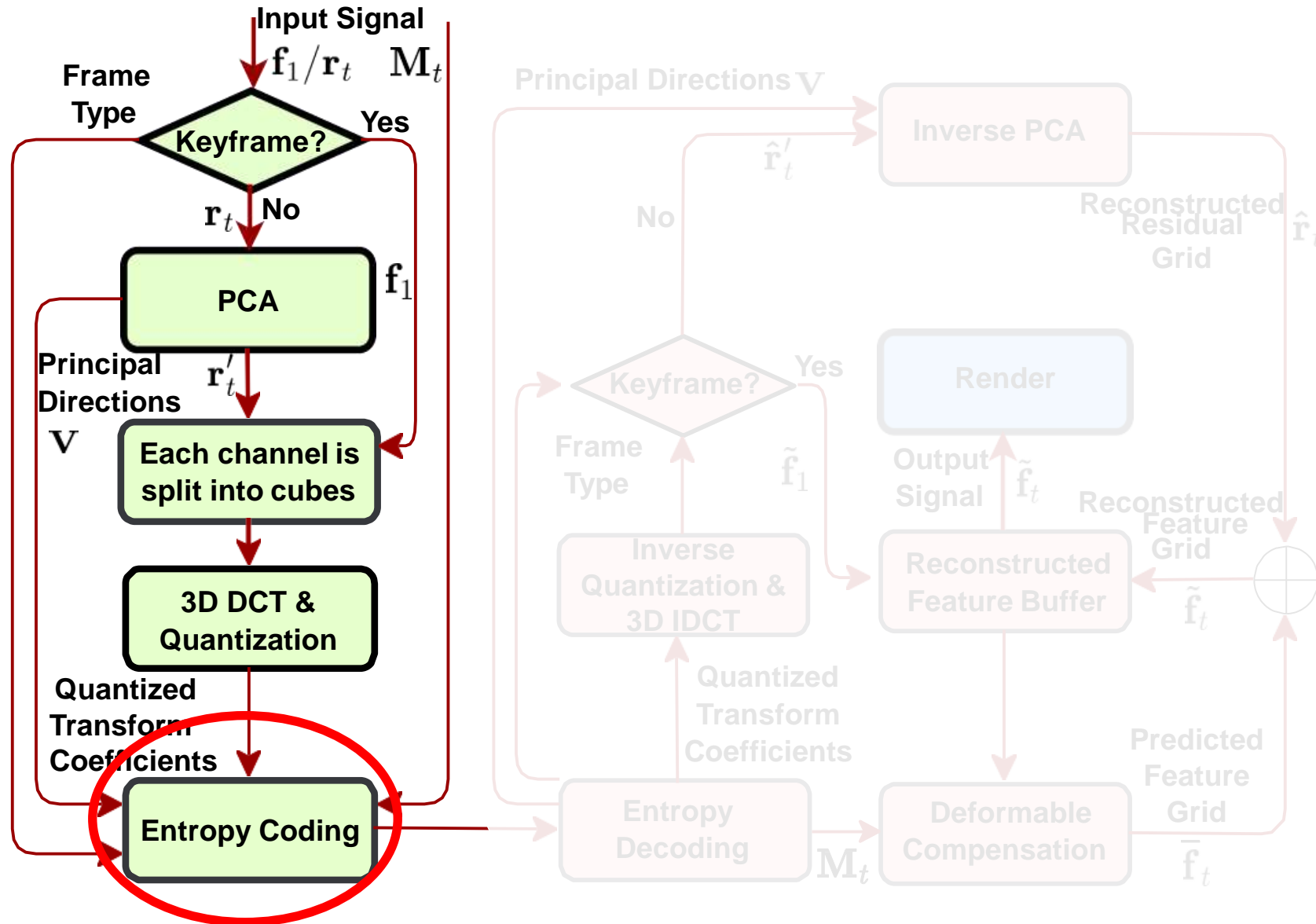
# ReRF-based codec scheme



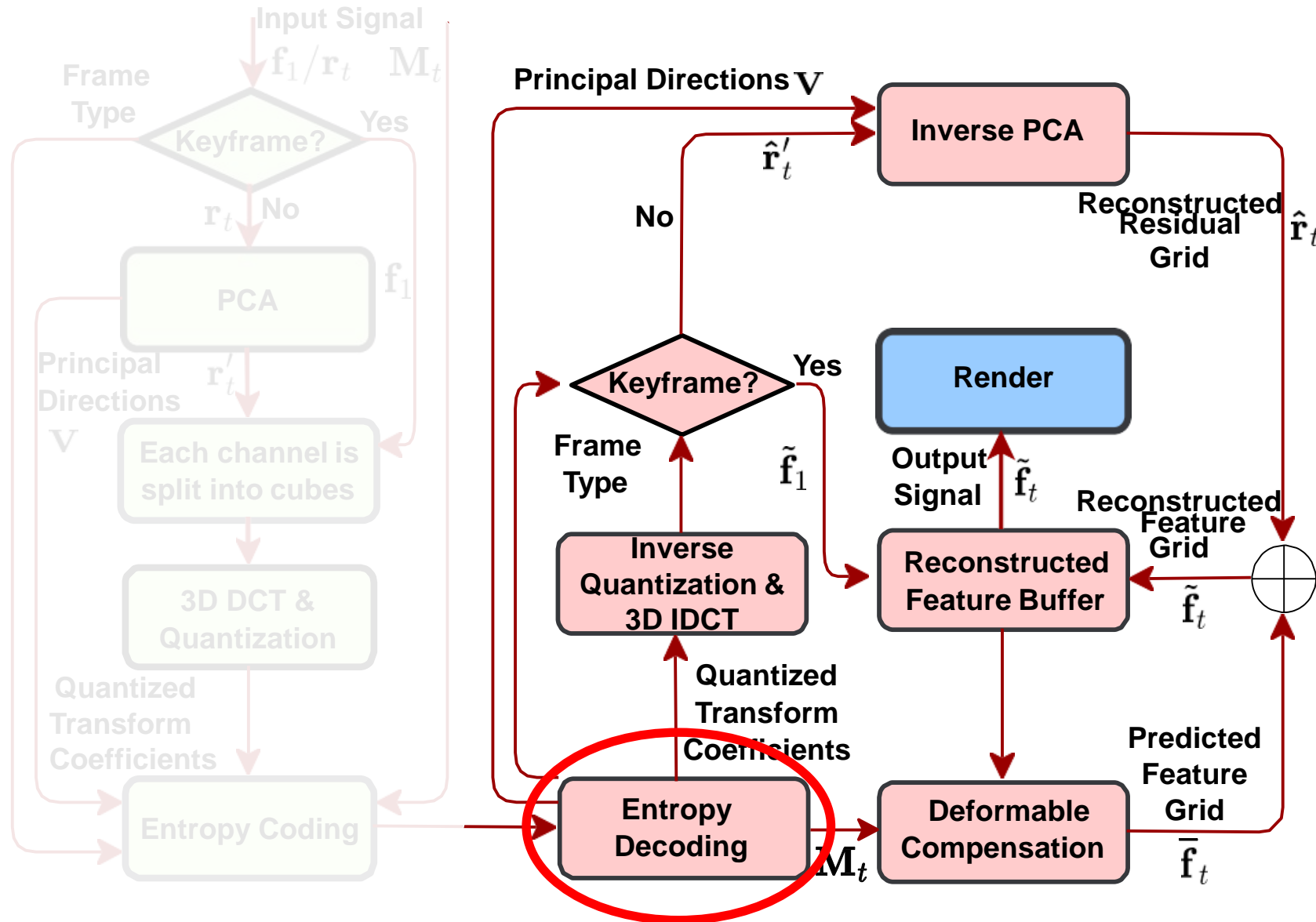
# ReRF-based codec scheme



# ReRF-based codec scheme

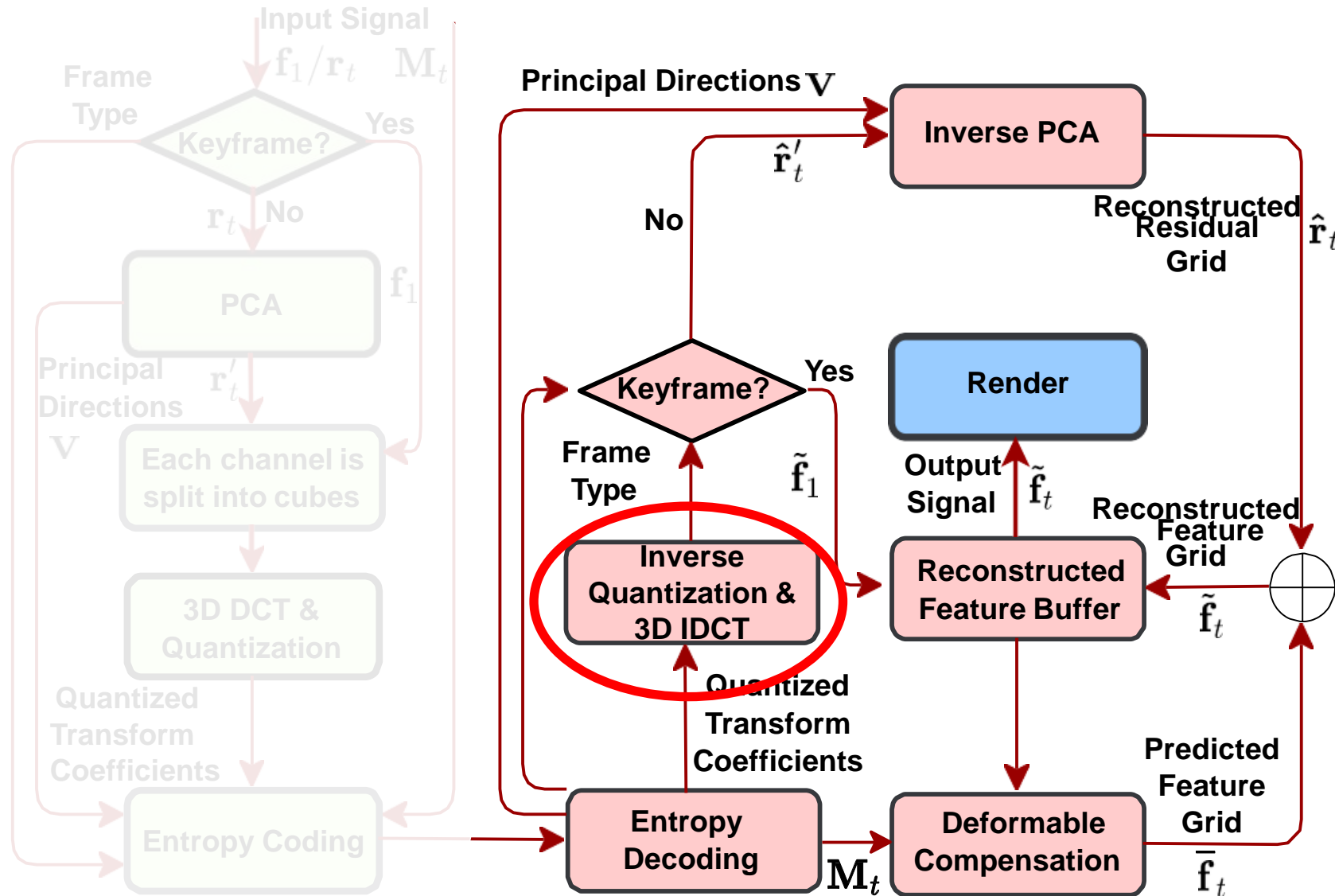


# ReRF-based codec scheme

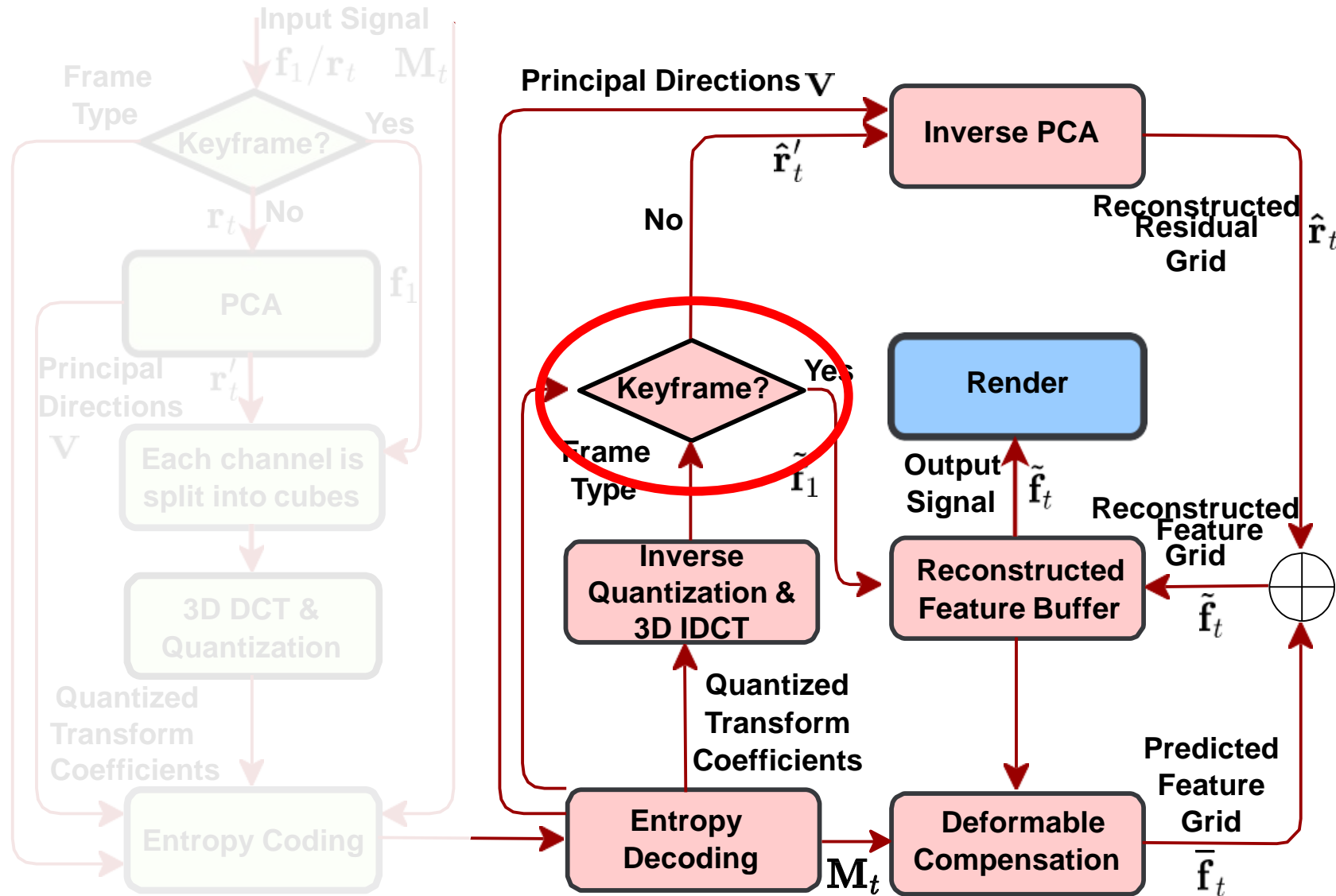




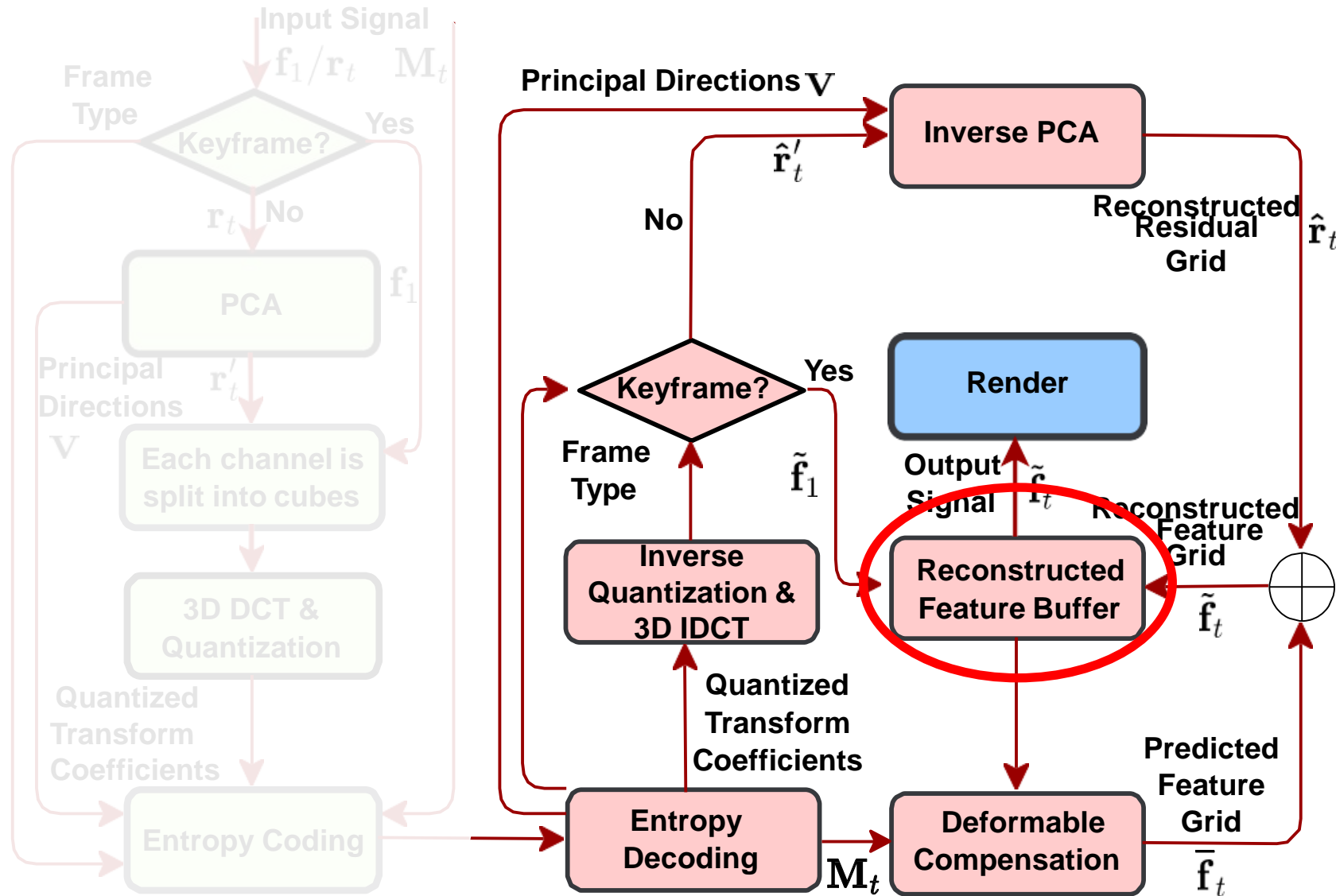
# ReRF-based codec scheme



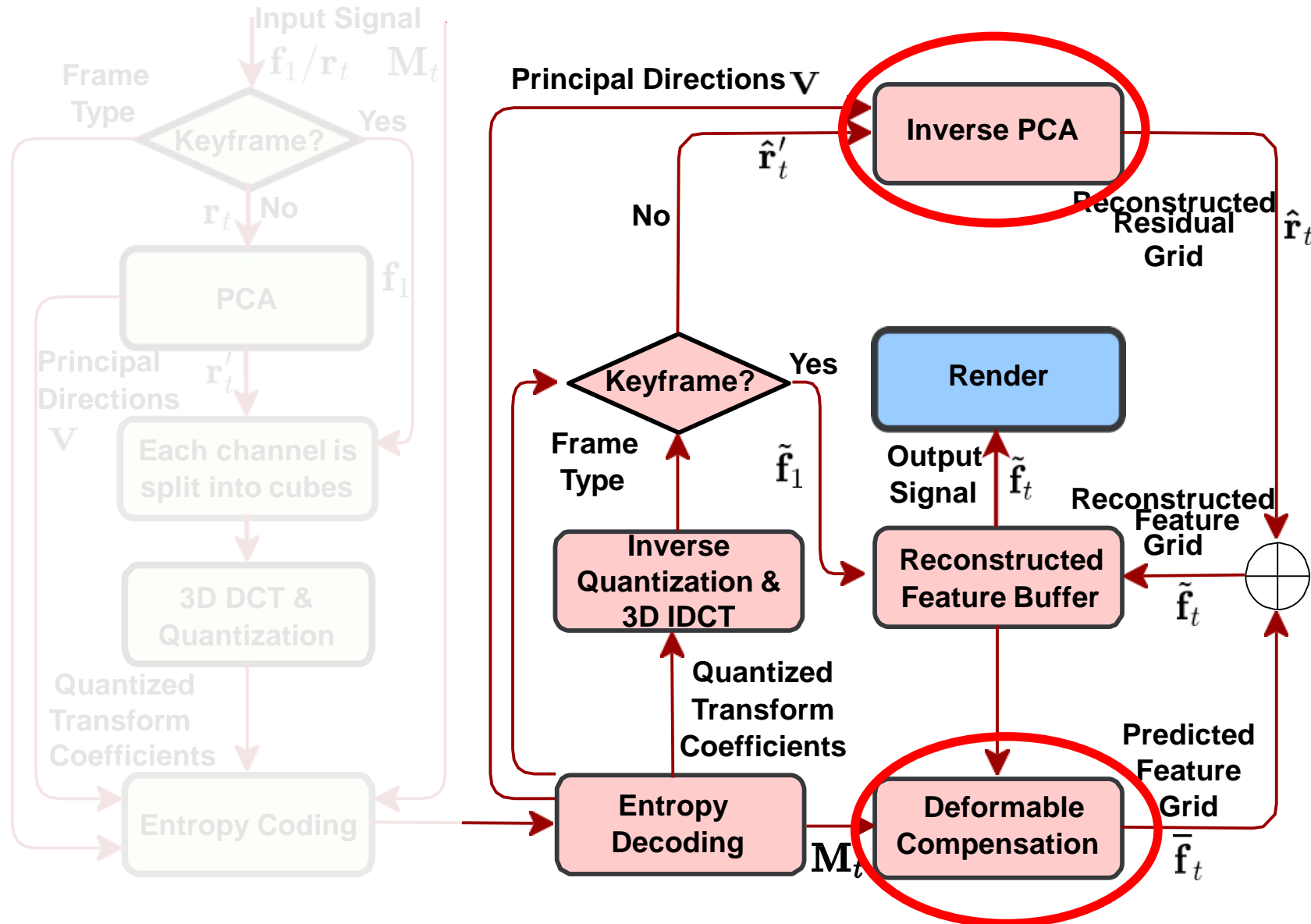
# ReRF-based codec scheme

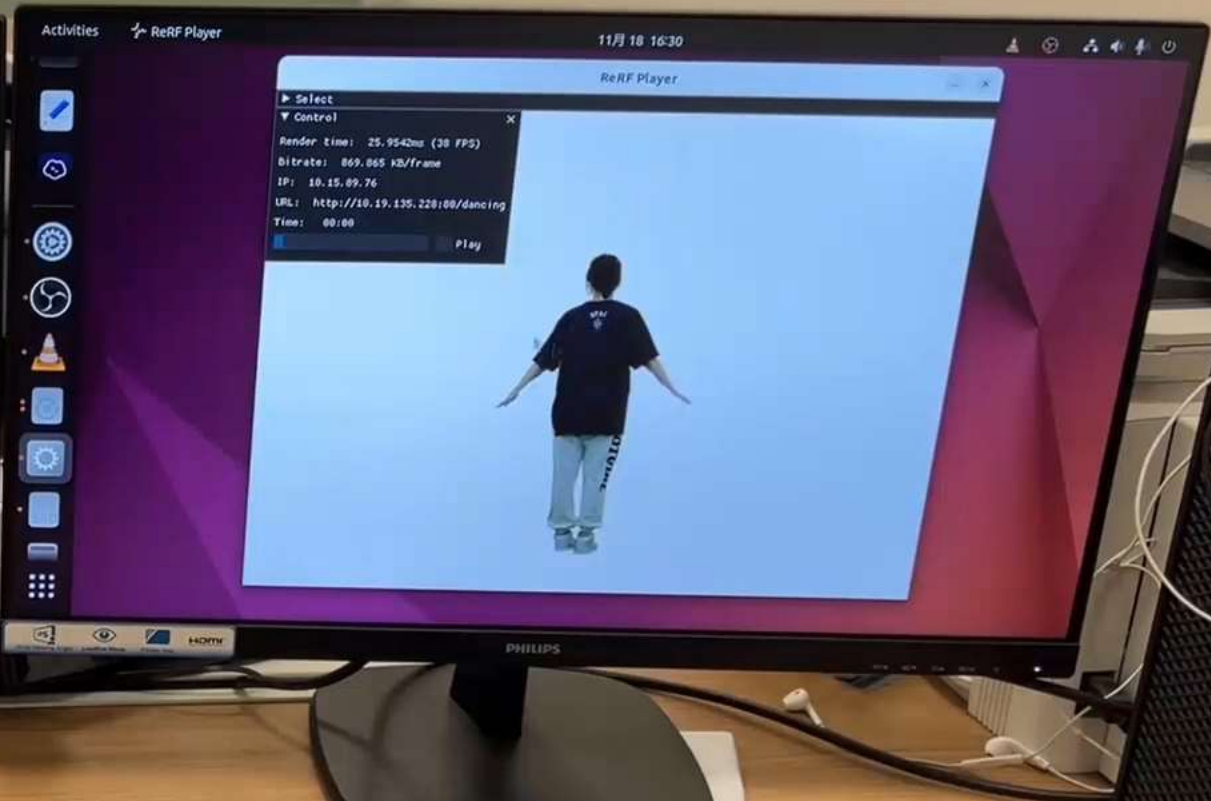
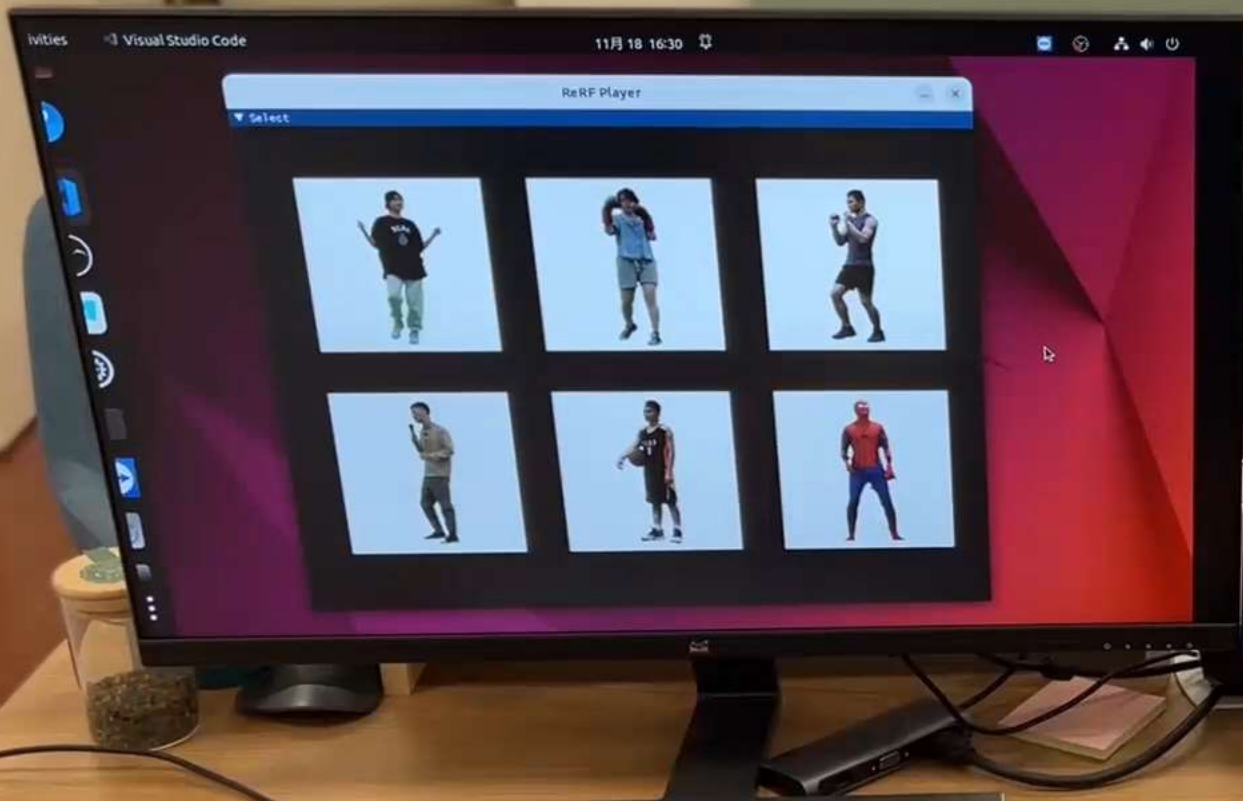


# ReRF-based codec scheme



# ReRF-based codec scheme





# Thank you for watching

