NeRF for Hand-Object Interactions

The goal of this work is to develop a framework for fitting a Neural Radiance Field (NeRF) for hand-object interaction sequences while parametrizing the hand and object poses.

The task could be described as follows:

Given a sequence of calibrated and synchronized multi-view RGB videos for two hands interacting with an object, along with the ground truth poses. We need to fit a NeRF network to the interaction sequence where the poses are fed as part of the input parameters.

The goal is to be able to synthesize novel poses that are similar to the input by altering the input pose parameters.

Prerequisites

Basic Requirements

- Basic Knowledge of deep learning
- Python, PyTorch

Nice to Have:

- Knowledge about 3D computer vision or computer graphics.
- Familiarity with 3D deep learning libraries (Pytorch3D or Kaolin)

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