Motivation: Learn Part Motion Using NIR

We propose a novel framework for modelling and generating articulated objects. To model the continuous articulations and motions smoothly, we adopt neural implicit representations (NIR) to predict the transformations of moving part points of the object.

Experiments on diverse object categories, novel categories and multi-part objects, and visualization of transformation grids, interpolation and extrapolation demonstrate the superiority of our proposed framework.

Contribution:

- We propose a novel framework for modelling and generating articulated objects. To model the continuous articulations and motions smoothly, we adopt neural implicit representations (NIR) to predict the transformations of moving part points of the object.
- Experiments on diverse object categories, novel categories and multi-part objects, and visualization of transformation grids, interpolation and extrapolation demonstrate the superiority of our proposed framework.

Visualization on Training (first 6) and Novel (last 3) Categories

Visualization of Transformation Grids, Interpolation, Extrapolation and Multi-part Objects

More Articulated Object Representation and Manipulation Works in Our Group