Simulation of the multi-view imaging system with differentiable ray tracing

September 2021
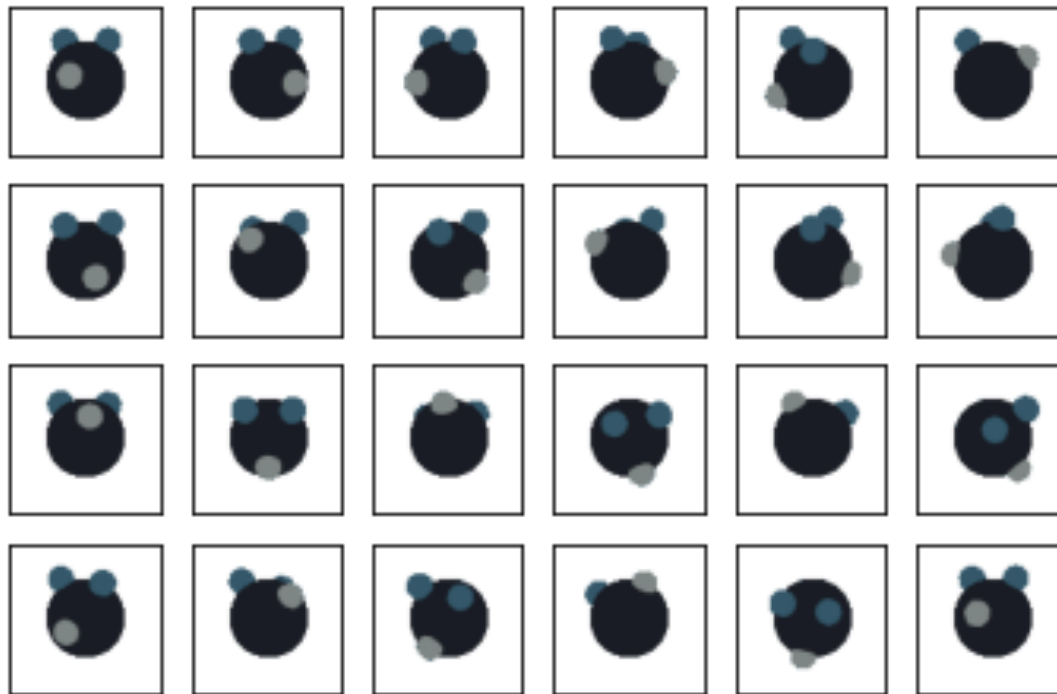
Camera parameters

Optimised Parameters

NeRF Model   Camera Extrinsics   Camera Intrinsics
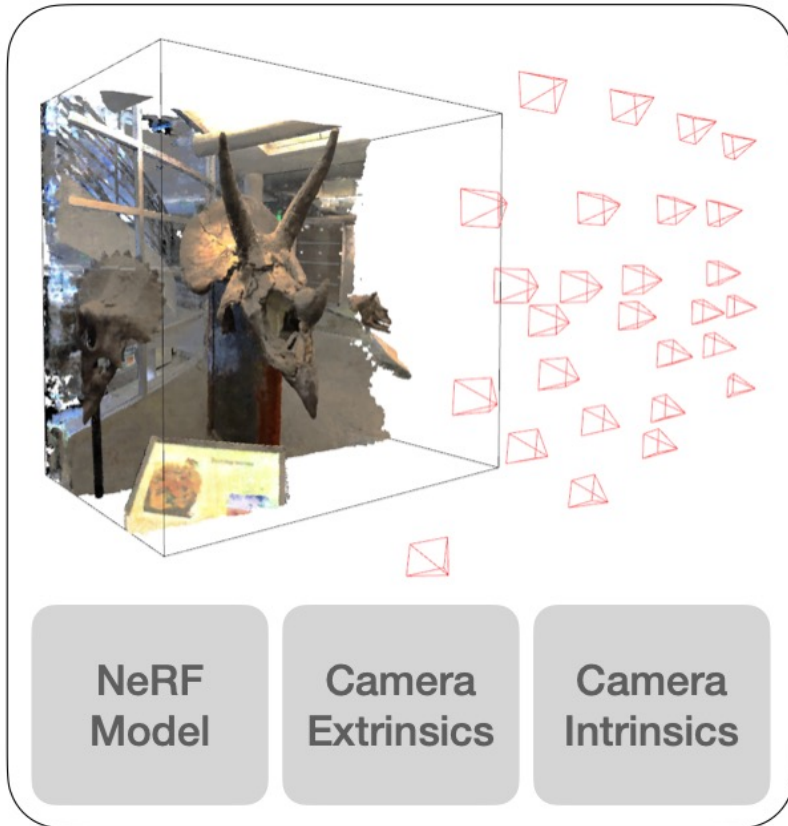
- State of the art neural-based reconstruction algorithms use COLMAP[Schonberger and Frahm 2016] to estimate the camera parameters

- No perfect calibration and still produce decent results

- Can we reconstruct a target object without perfect calibration?

SLAC

- Let us see if we can reconstruct a synthetic object without perfect calibration

3d object imaged with our simulator

3d reconstruction with synthetic data

- Let us see if we can reconstruct a synthetic object without perfect calibration

  - Code almost ready
    - Neural-based reconstruction
    - Voxel-based reconstruction
  - Can work on real data at the same time