6DAPose Dataset

6DAPose presents two synthetic image datasets for 6D object assembly pose estimation in robotic assembling tasks. The dataset contains 431 RGB and depth images, ground-truth object and camera pose for each assembly step and model information in BOP format. The datasets are generated by a hemisphere view sampling technique using mesh files in gazebo simulation environment. The code and instructions in GitHub : https://github.com/KulunuOS/6DAPose.

Dataset

Mesh model					
Mesh name	Bottom casing	Left gear	Right gear	Top casing	Complete assembly
Diameter [cm]	3.81	2.78	2.78	3.82	

Figure 1: Fidget gear assembly https://www.thingiverse.com/thing:3936460

Mesh model						
Mesh name	Nema17 Motor	Sun gear	Housing	Carrier	Cover	Complete assembly
Diameter [cm]	7.67	2.70	6.17	3.56	5.38	

Figure 2: Nema17 reducer assembly https://www.thingiverse.com/thing:8460

Method
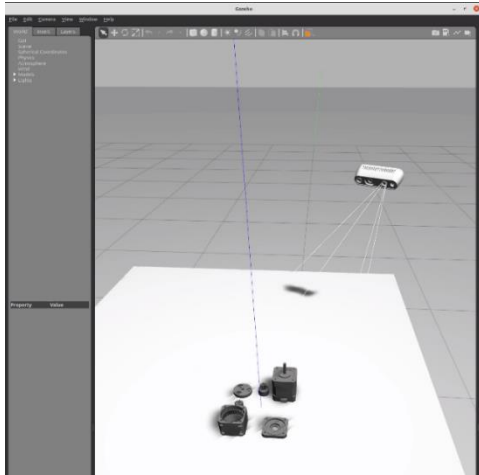
Figure 3: Gazebo simulation

Figure 4: Hemisphere sampling algorithm

Acknowledgement