MOT & Reconstruction W10

- W7/8
- W9
- W10
- Mug
- Issues
- What’s next with BundleSDF?

W7/8

- Big mistake in preparing my dataset
  - RGB and D had different resolutions
  - It is very obvious why BundleSDF had major issues in doing MOT and 3D reconstruction

W9

- Correct code for streaming and recording Kinect RGBD images
- Can prepare dataset fast
  - Bottleneck: MiVOS (masks) works up to 200 frames at the time before reaching memory issues
- Depth images converted into RGB calibration format

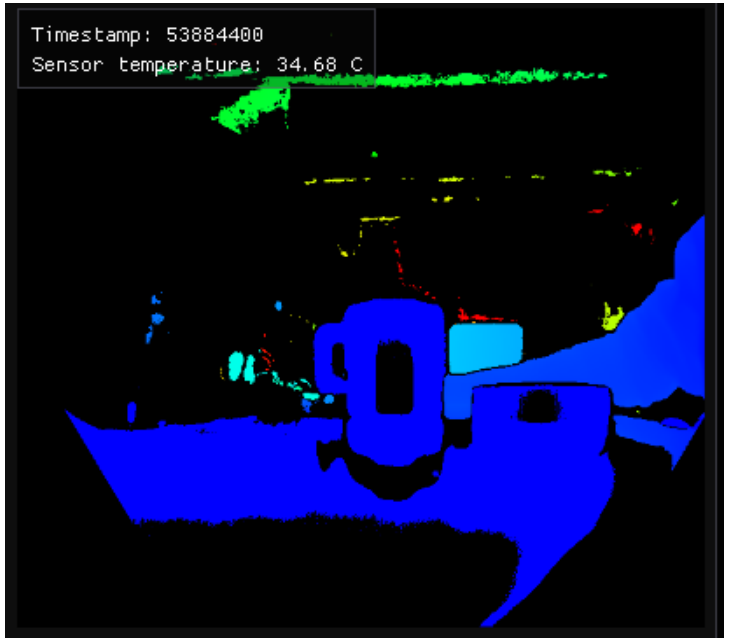
W9

First try
(wrong resolutions)

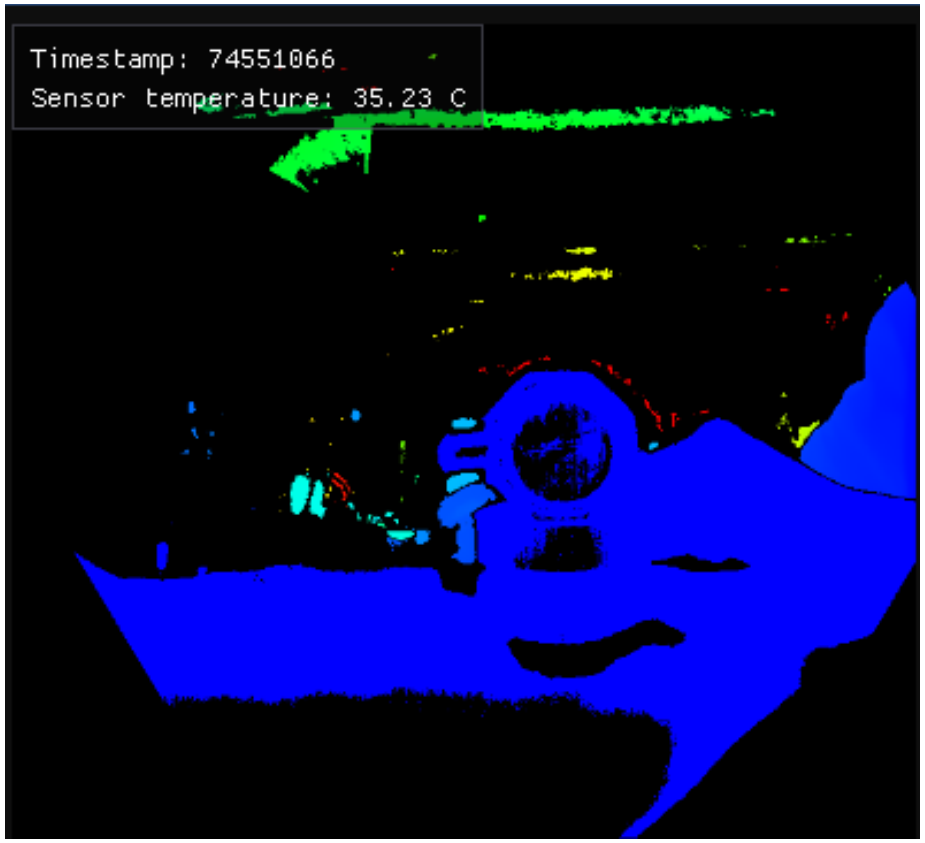
New try

Mug

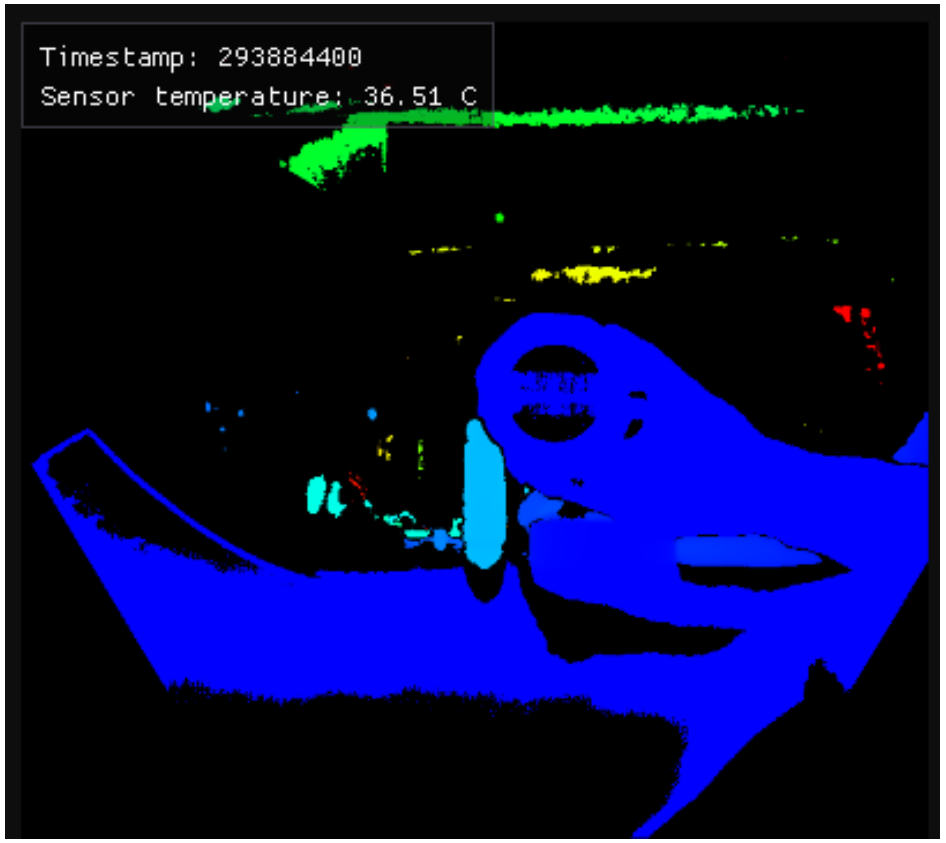
- Prepared a new dataset with a different object
- 1000 RGBD frames
- Mug completely covered in paper to avoid reflections



Mug

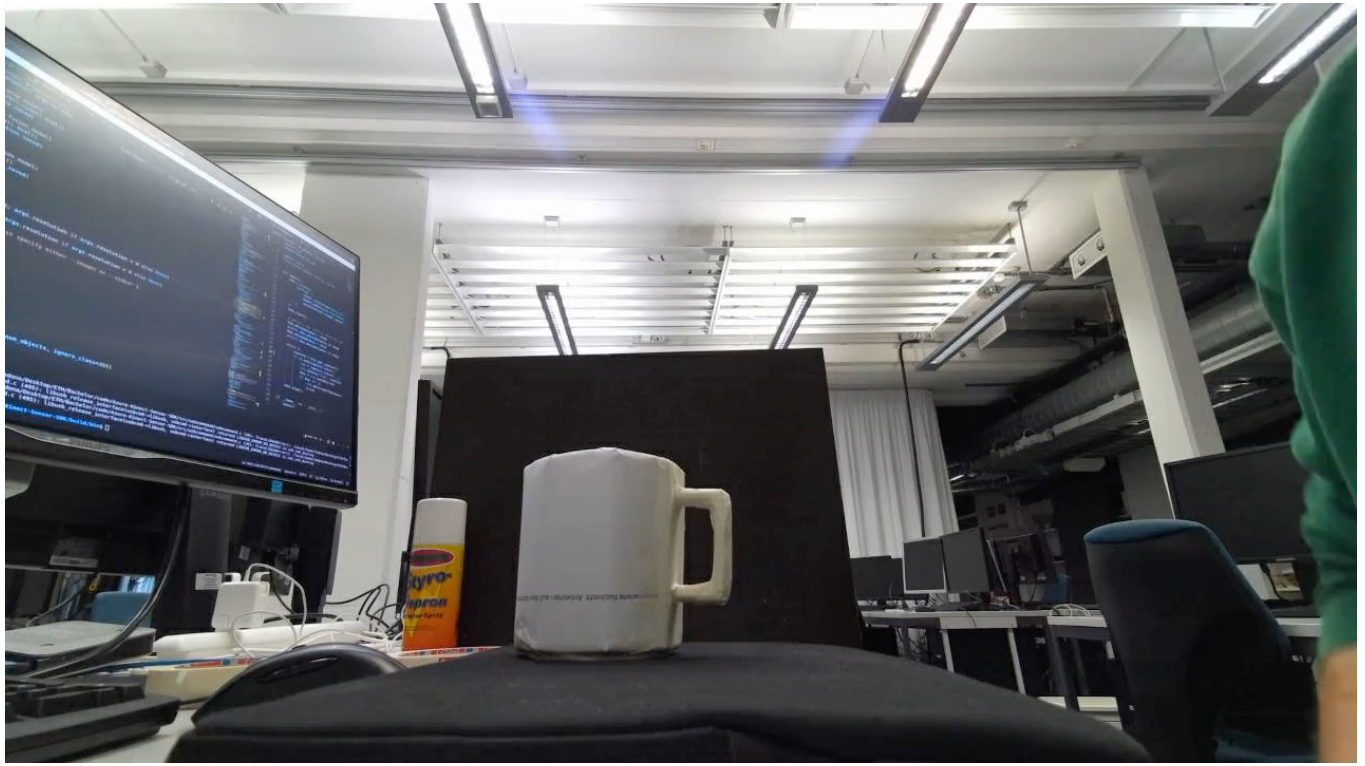


Without masking tape



With one strip of masking tape

Mug



Mug

First 3D reconstruction (49th frame)

Final 3D reconstruction (973th frame)

Mug

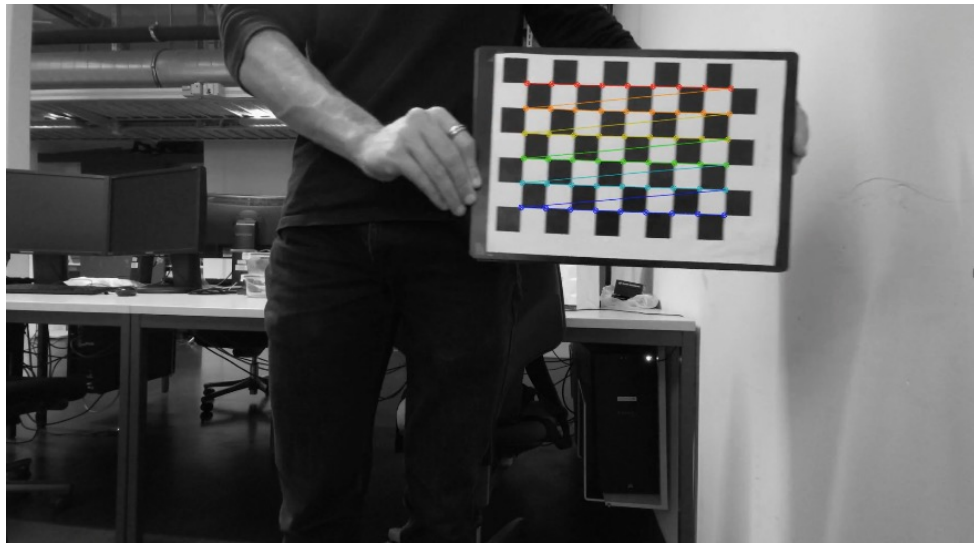
- Object seems to be diagonally skewed
  - Wrong calibration parameters?
    - Other runs with different parameters have same issue
- Major object pose estimation mistakes!
  - Vertical rotations seem to be captured
  - When handle is hidden it does not understand that the mug is rotating horizontally

Mug

- Room for changes
  - Transform RGB to D and not vice-versa
    - The object must anyway be centered to the image otherwise D information are not captured
  - Use same resolutions as original datasets
  - ?

Issues

- Camera calibration
  - So far mostly guessing the parameters
    - smidm/video2calibration
    - calibration_info
  - Original script requires opencv 4.1.0



What's next with BundleSDF?

- Check how score evaluation is done to try evaluating some results
  - How to get ground truth?
- Standing still
  - Check out new papers