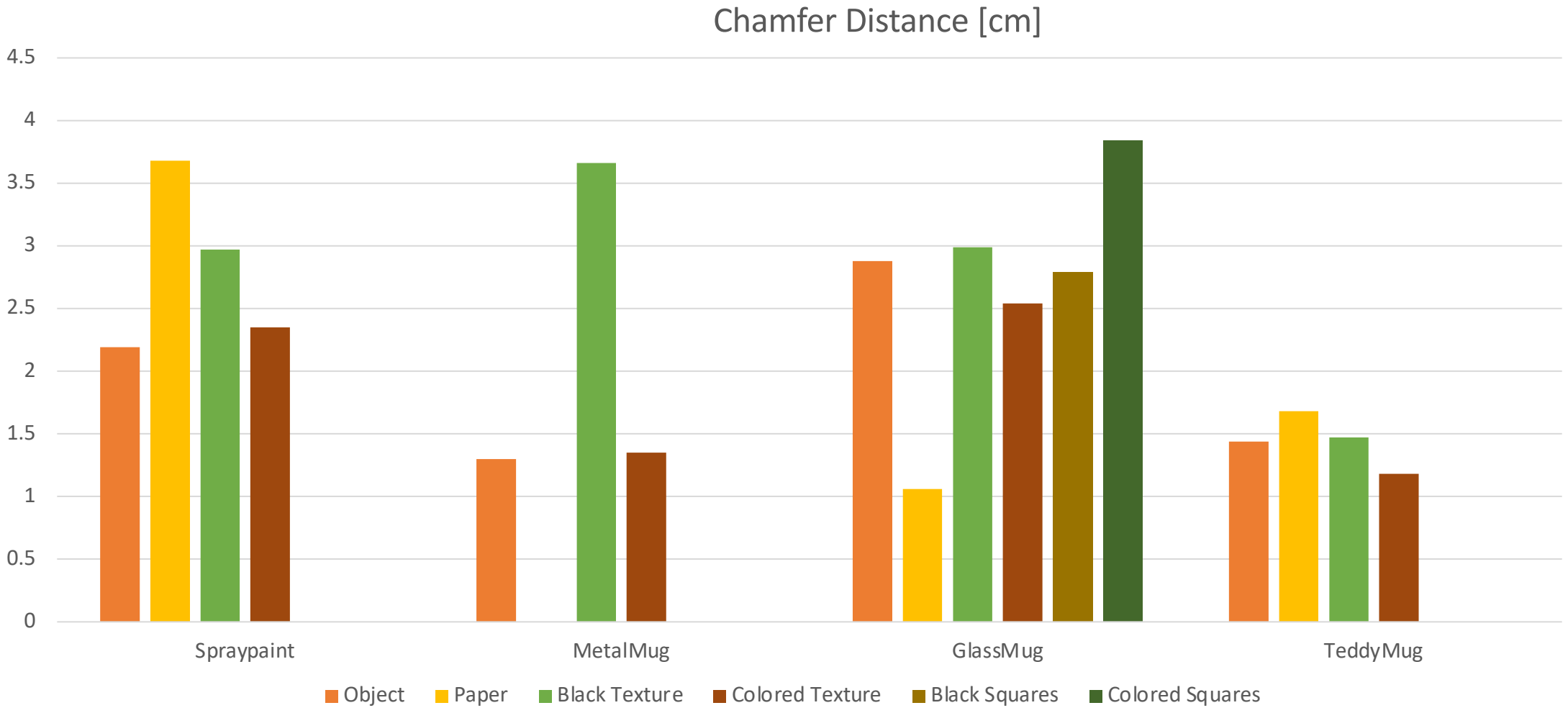
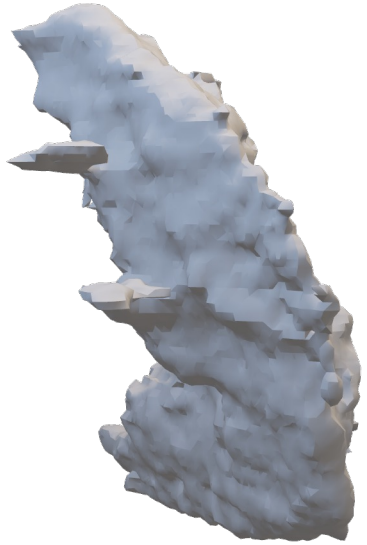
MOT & Reconstruction W18

- CD Results
  - First concrete assumptions
- ADD score questions
- BOP papers WIP

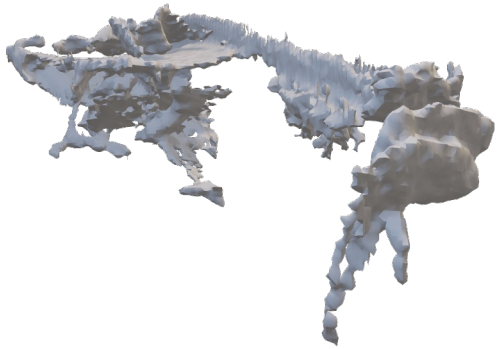
MOT & Reconstruction W18



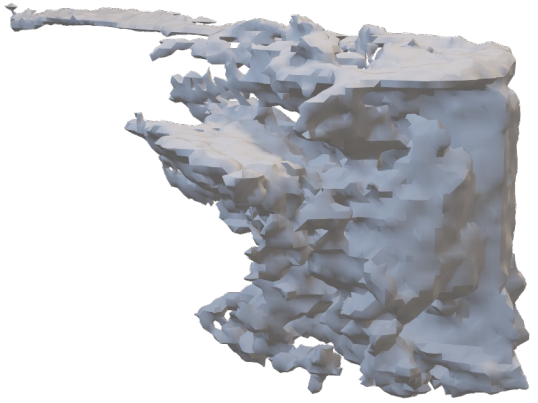
MOT & Reconstruction W18



Metal Mug

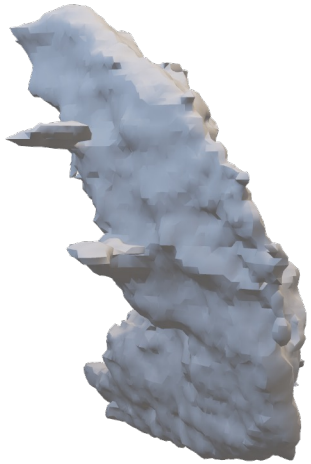


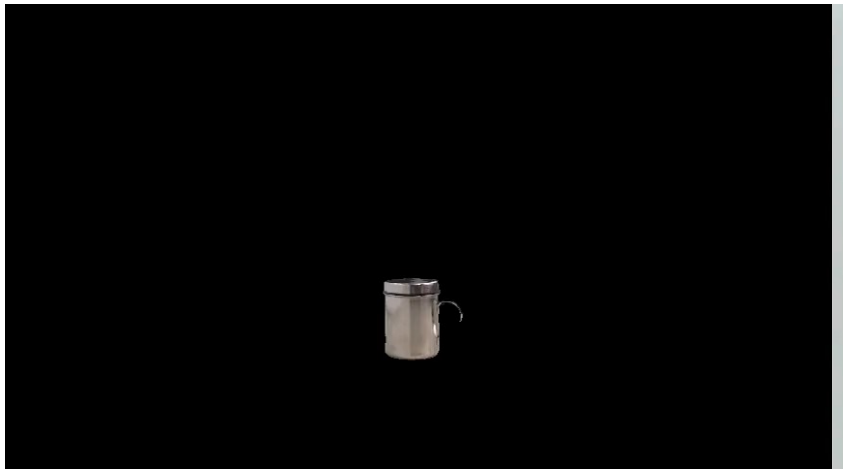
w/BlackTexture

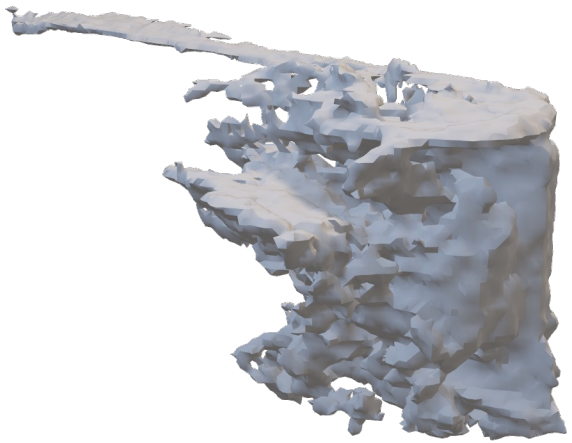


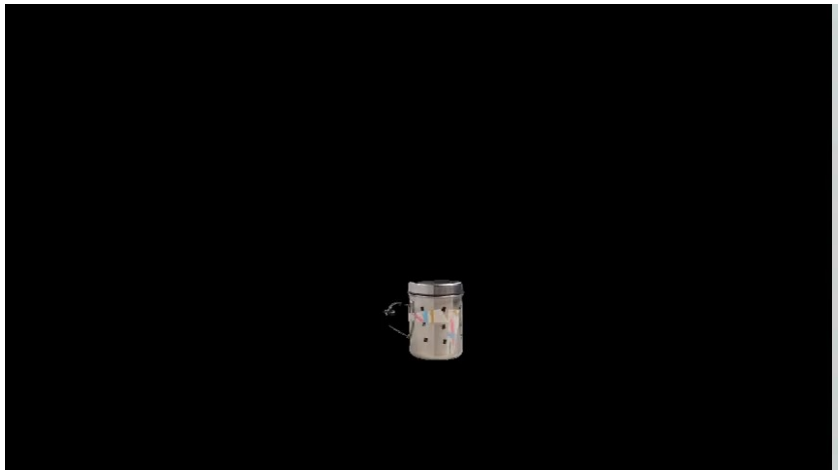
w/ColoredTexture

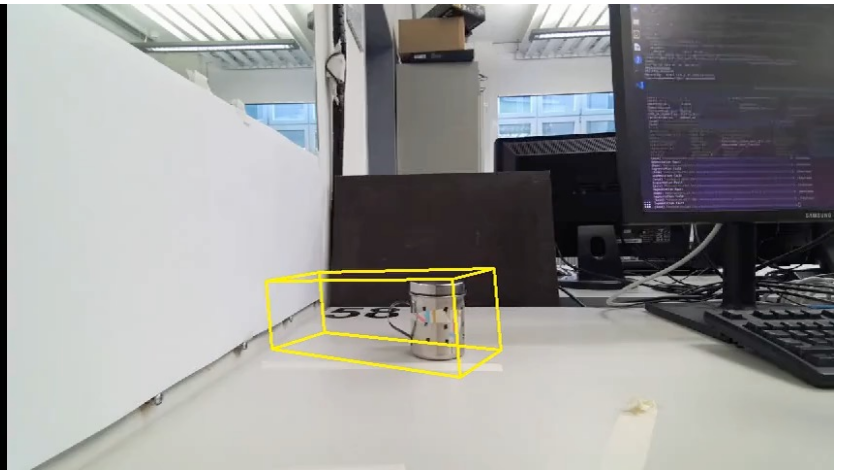
MOT & Reconstruction W18



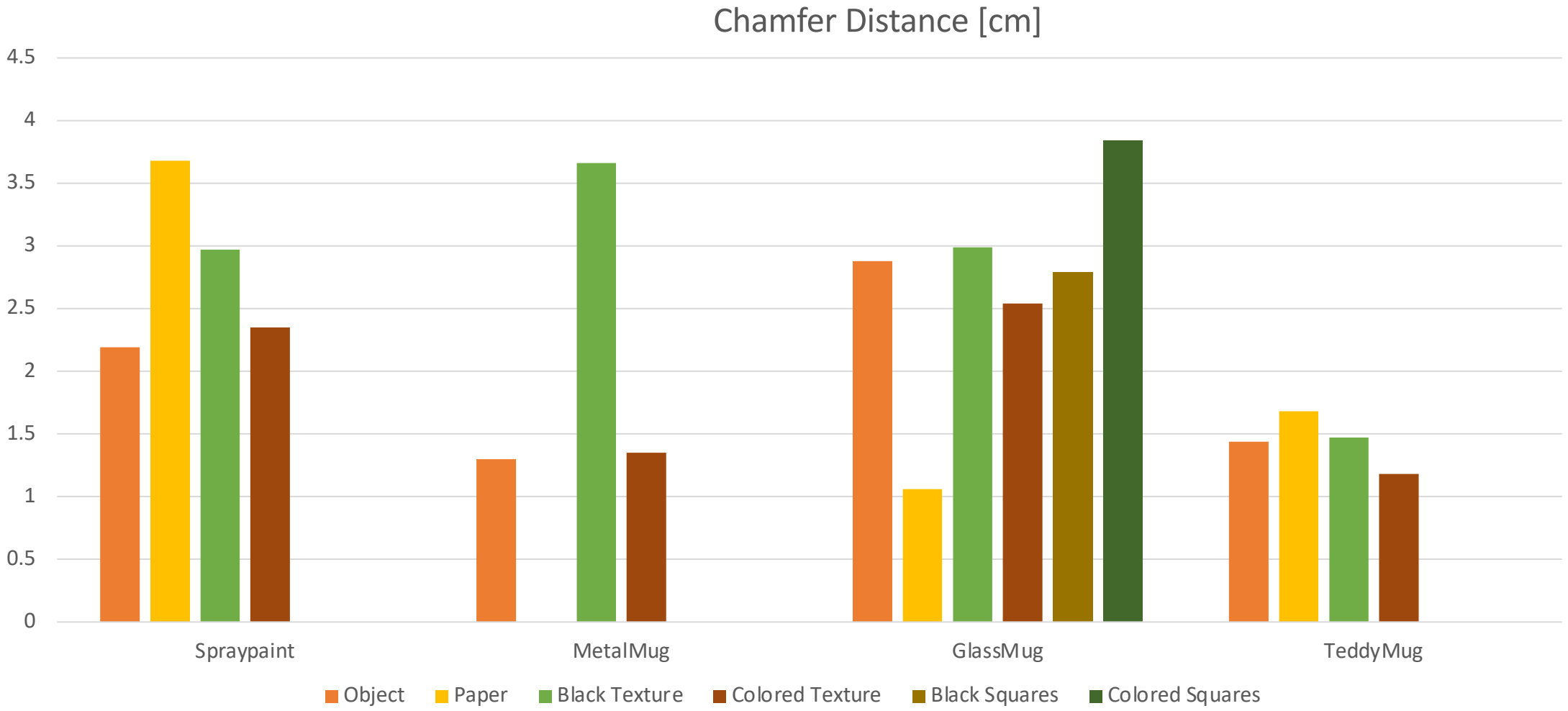




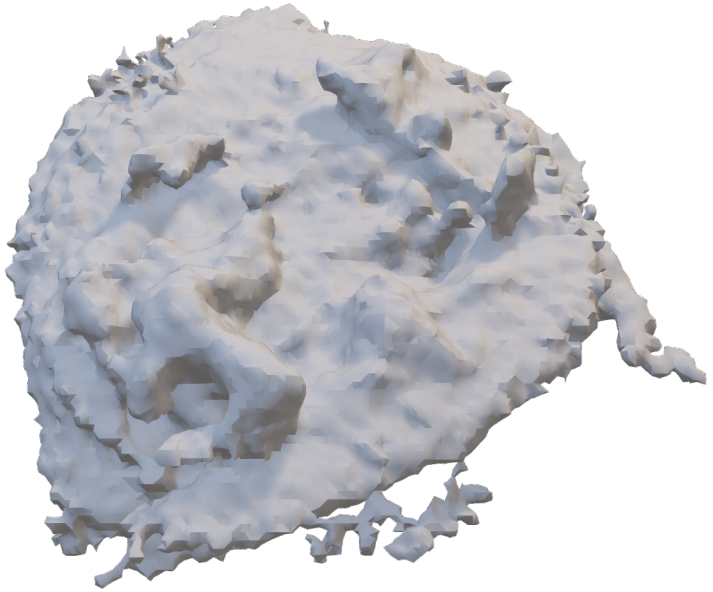




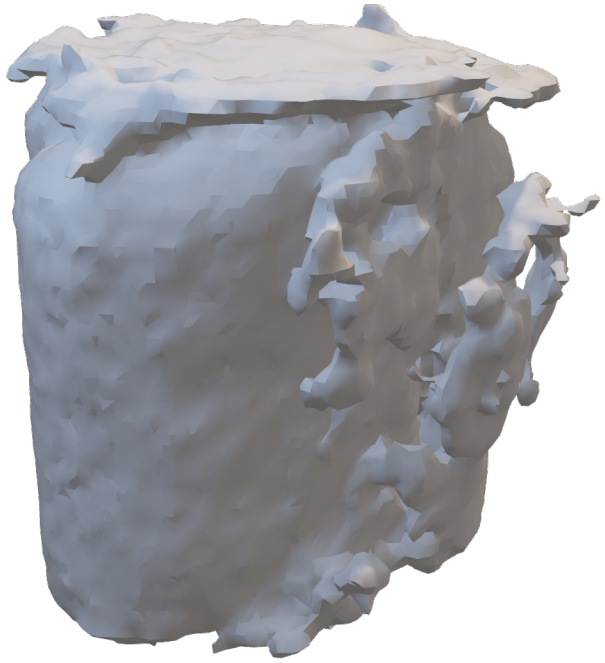
MOT & Reconstruction W18



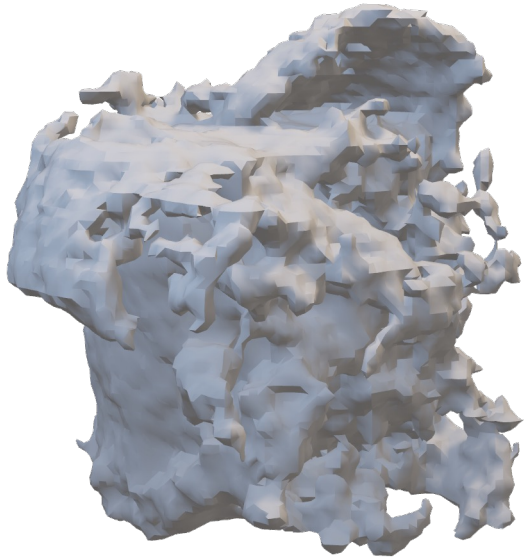
MOT & Reconstruction W18



Glass Mug

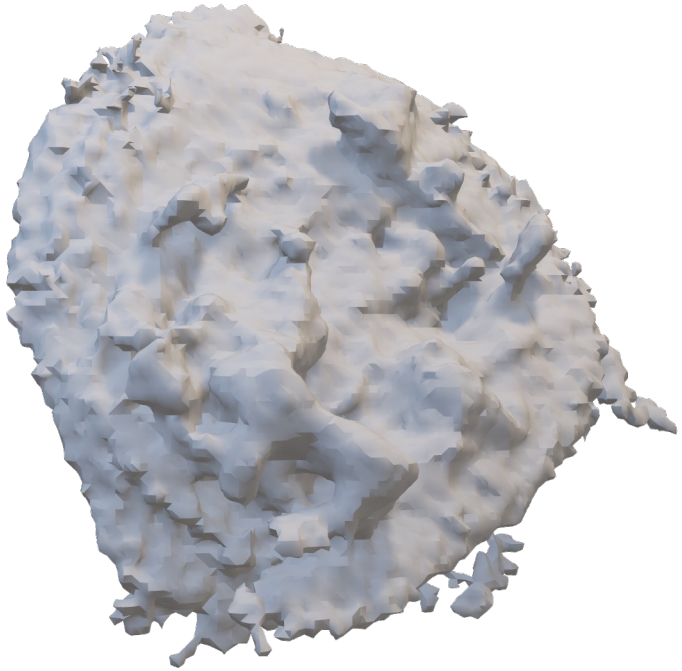


w/PaperTexture

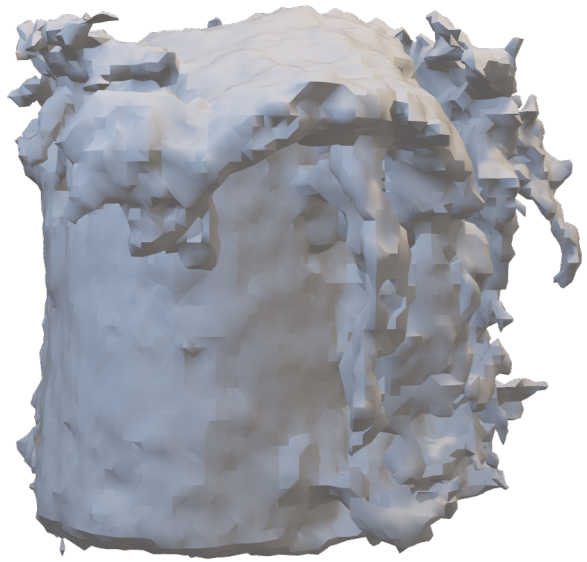


w/ColoredTexture

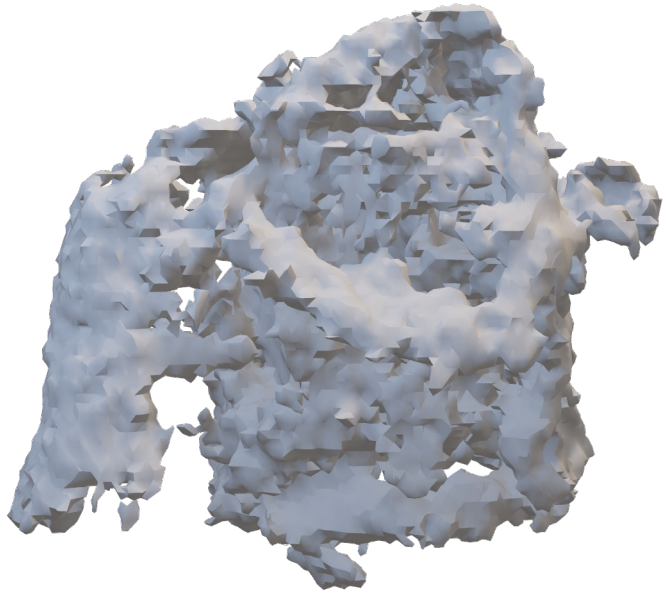
MOT & Reconstruction W18



Glass Mug

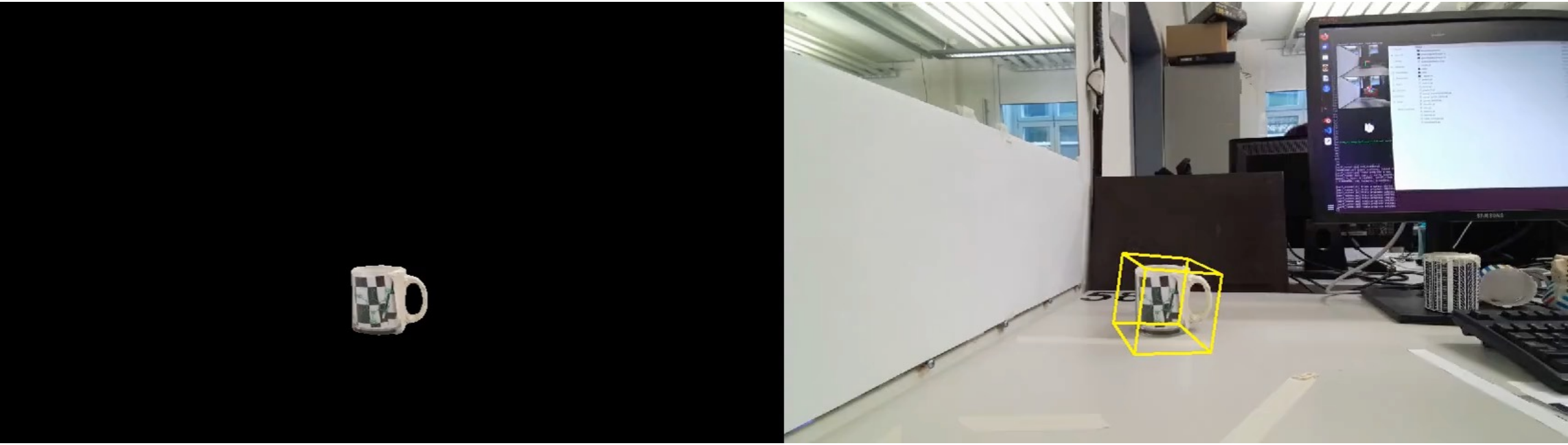


w/BlackSquares Texture

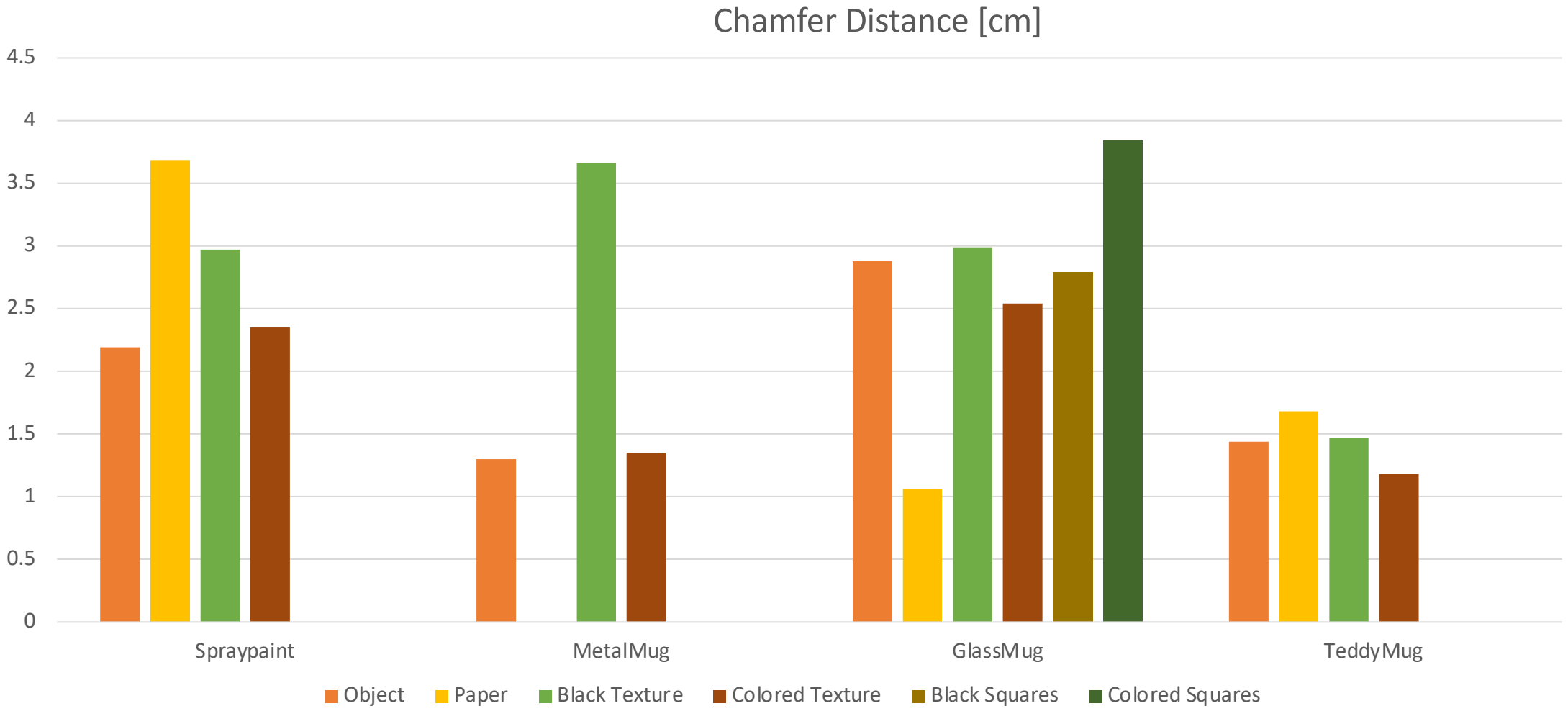


w/ColoredSquares Texture

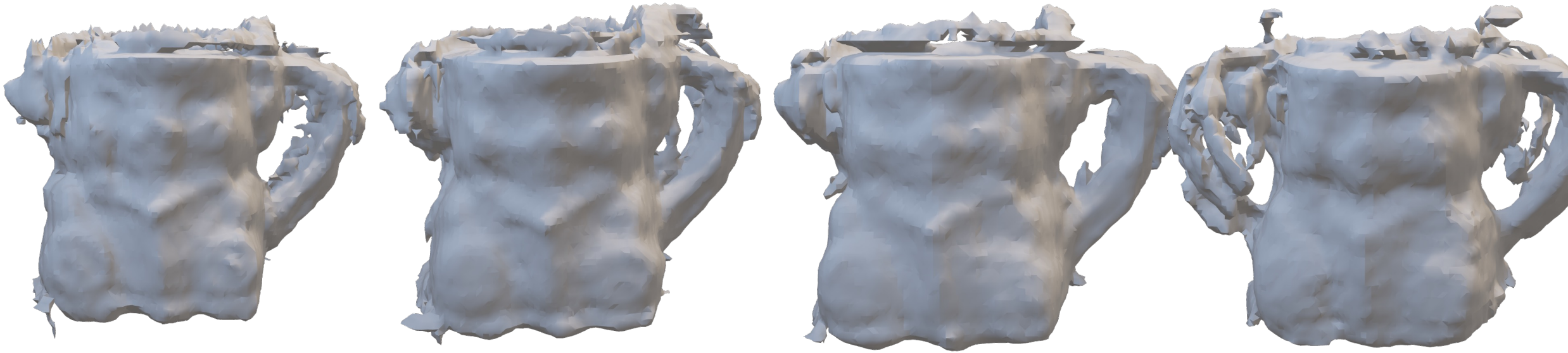
MOT & Reconstruction W18



MOT & Reconstruction W18



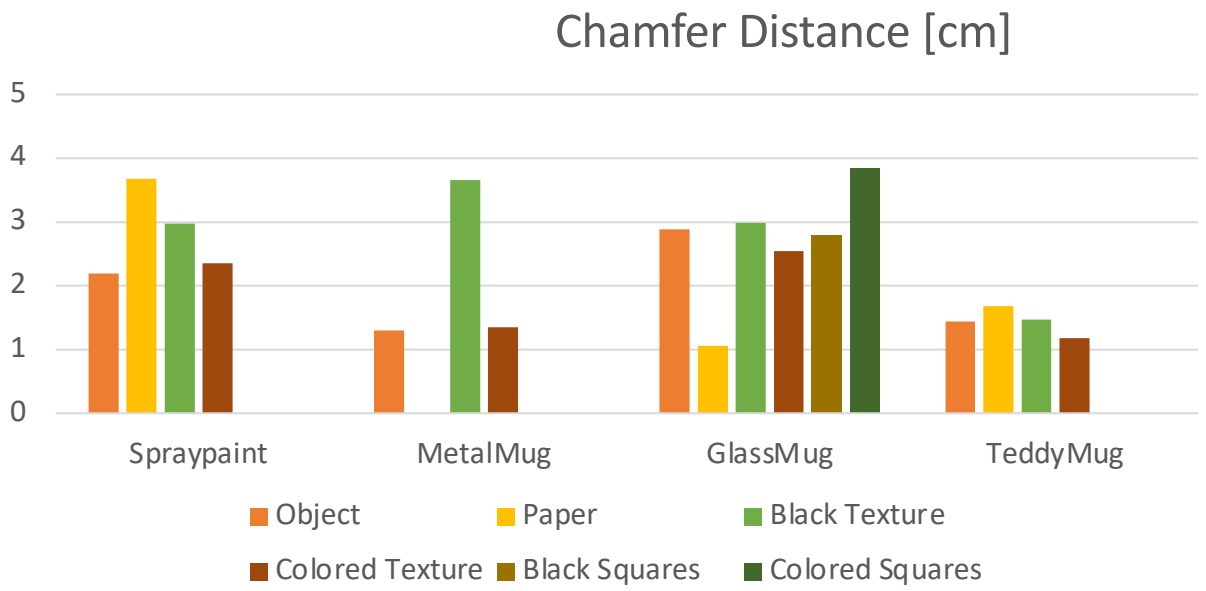
MOT & Reconstruction W18



TeddyMug w/PaperTexture w/BlackTexture w/ColoredTexture

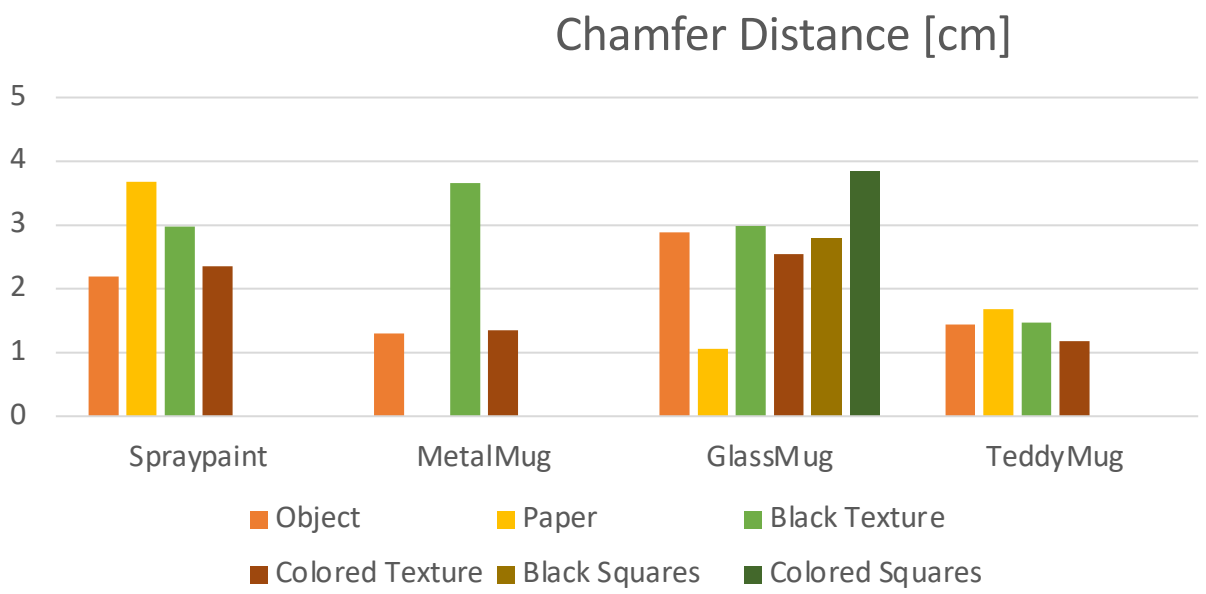
MOT & Reconstruction W18

- The resulting Chamfer Distance has generally a very bad score, but I can use it to compare my different runs on the same object.
- Progress from paper texture down to colored texture as expected.
  - Add two new steps with squares textures?



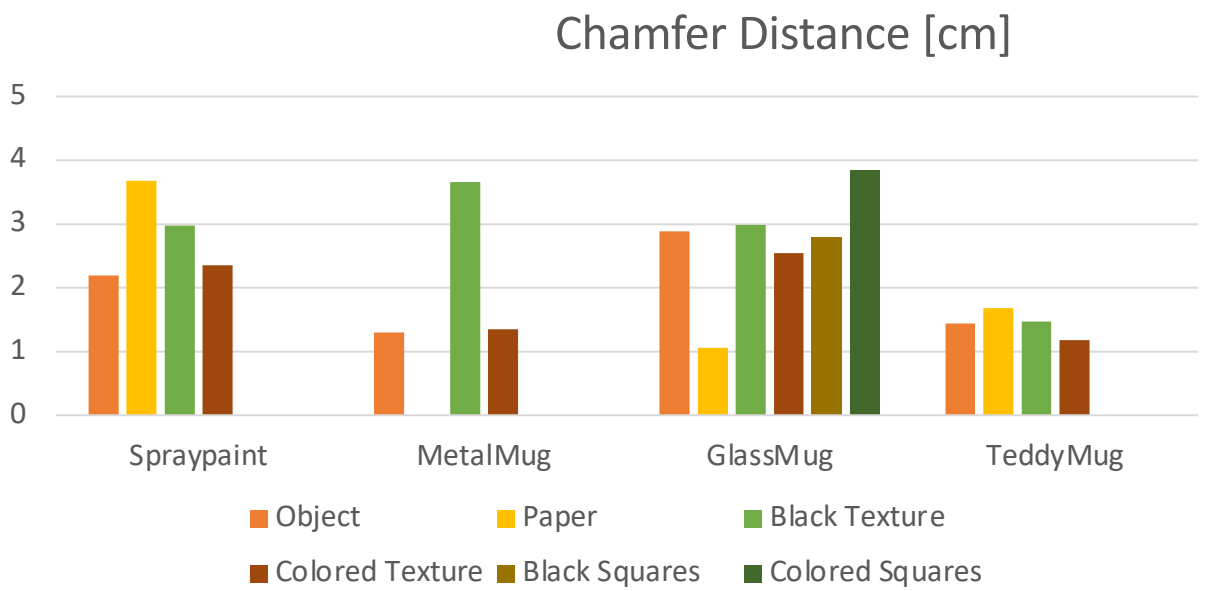
MOT & Reconstruction W18

- Not always the best CD means the best reconstruction, pose estimation looks better but worst reconstruction
  - Ex: GlassMug covered in paper
- Not always the best reconstruction means the best CD
  - Ex: TeddyMug with colored texture



MOT & Reconstruction W18

- Videos with same objects are different
  - Same number of frames
  - Same external conditions
  - Different movement speed



MOT & Reconstruction W18

- I want to compute the ADD score
  - More relevant than CD?
  - I cannot register GT poses
    - No robotic arm
  - Two Options:
    - Use other BOP datasets with continuous images (not Linemod)
    - Create a small synthetic dataset with blender
      - Easier to customize

MOT & Reconstruction W18

	Date (UTC)	Method	Test image	AR_{Core}
1	2023-09-27	GPose2023	RGB-D	0.856
2	2023-09-24	GPose2023-OfficialDet	RGB-D	0.851
3	2023-09-27	GPose2023-PBR	RGB-D	0.844
4	2022-10-15	GDRNPP-PBRReal-RGBD-MModel	RGB-D	0.837
5	2022-10-15	GDRNPP-PBR-RGBD-MModel	RGB-D	0.827
6	2023-09-27	ZebraPoseSAT-EffnetB4_refined(Def...	RGB-D	0.813
7	2022-10-14	GDRNPP-PBRReal-RGBD-MModel-Fast	RGB-D	0.805
8	2023-09-25	OfficialDet-PFA-Mixpbr-RGB-D	RGB-D	0.800
9	2022-10-13	GDRNPP-PBRReal-RGBD-MModel-Offici...	RGB-D	0.798
10	2023-09-26	GDRNPPDet_PBRReal+GenFlow-MultiHypo	RGB-D	0.792
11	2022-10-11	RADet+PFA-MixPBR-RGBD	RGB-D	0.787
12	2022-10-12	RADet+PFA-MixPBR-RGBD-Fast	RGB-D	0.771
13	2022-10-16	RCVPose 3D_SingleModel_VIVO_PBR	RGB-D	0.768
14	2022-10-15	ZebraPoseSAT-EffnetB4 + ICP (Defa...	RGB-D	0.765
15	2022-10-12	RADet+PFA-PBR-RGBD	RGB-D	0.762
16	2021-12-22	SurfEmb-PBR-RGBD	RGB-D	0.758
17	2024-01-14	HccePose(efficientnet-b4 & Defaul...	RGB	0.758
18	2023-09-25	ZebraPoseSAT-EffnetB4(DefaultDete...	RGB	0.749

- Most papers assume GT