

Task 1



A_beach_scene_at_sunrise_with_golden_sands



A_bustling_city_skyline_at_night_with_skyscrapers



A_dense_forest_in_autumn_with_trees_in_shades_of_red_orange



A_desert_landscape_with_vast_dunes_of_golden_sand



A_European_medieval_town_with_narrow_cobblestone_streets



A_lavender_field_in_Provence_with_rows_of_vibrant_purple_flowers



A_photo_of_a_beautiful_ocean_with_coral_reef



A_sweeping_panoramic_view_of_the_Grand_Canyon_at_sunset



A_tranquil_lake_surrounded_by_misty_mountains



The_Great_Wall_of_China_snaking_across_rugged_mountains

```
[{"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped", "score": 0.3167536914348602}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_sweeping_panoramic_view_of_the_Grand_Canyon_at_sunset_2343.png", "score": 0.33282166719436646}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_European_medieval_town_with_narrow_cobblestone_streets_349.png", "score": 0.31508123874664307}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_bustling_city_skyline_at_night_with_skyscrapers_1797.png", "score": 0.2883945405483246}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_desert_landscape_with_vast_dunes_of_golden_sand_2013.png", "score": 0.3255081176757578125}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_beach_scene_at_sunrise_with_golden_sands_2220.png", "score": 0.31090402603149414}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/The_Great_Wall_of_China_snaking_across_rugged_mountains_1046.png", "score": 0.30417773127555847}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_tranquil_lake_surrounded_by_misty_mountains_38.png", "score": 0.32299527525901794}, {"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_wide_cropped/A_photo_of_a_beautiful_ocean_with_coral_reef_2298.png", "score": 0.30274903774261475}, {"source_dir": null, "score": 0.3301902711391449} ]
```

Task 2

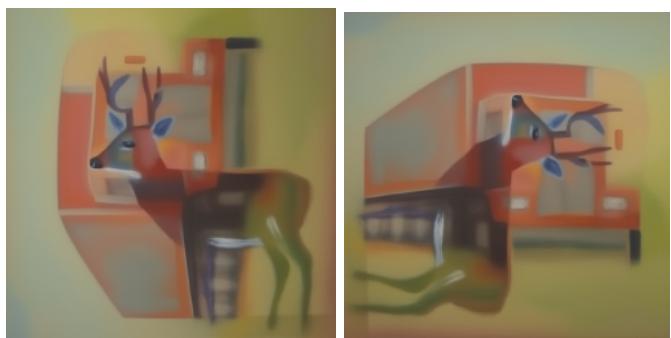
In this one, first prompt belongs to left image and second prompt belongs to right image



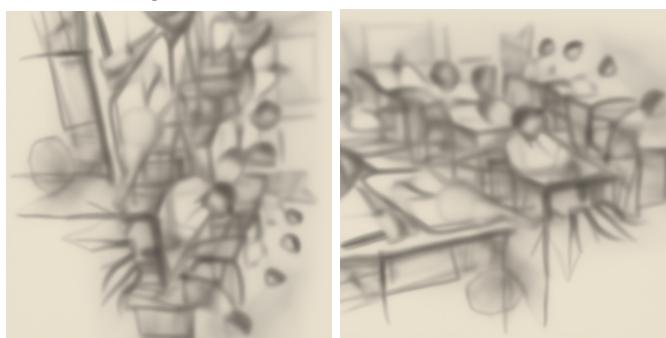
- 1)a_lithograph_of_a_table
2)a_lithograph_of_a_waterfall



- 1)a_painting_of_a_dog
2)a_painting_of_a_horse



- 1)a_painting_of_a_deer
2)a_painting_of_a_truck



- 1)a_pencil_sketch_of_flower_arrangements
2)a_pencil_sketch_of_students_in_a_classroom



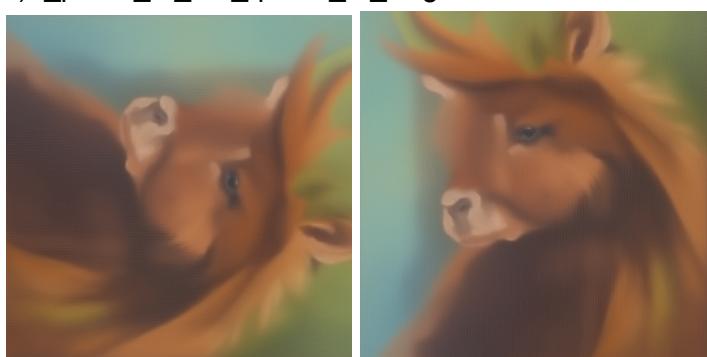
- 1)a_photo_of_a_car
- 2)a_photo_of_Pisa_tower



- 1)a_photo_of_a_duck
- 2)a_photo_of_a_rabbit



- 1)a_photo_of_a_goldfish
- 2)a_photo_of_the_queen_of_England



- 1)an_oil_painting_of_a_canyon
- 2)an_oil_painting_of_a_maine_coon



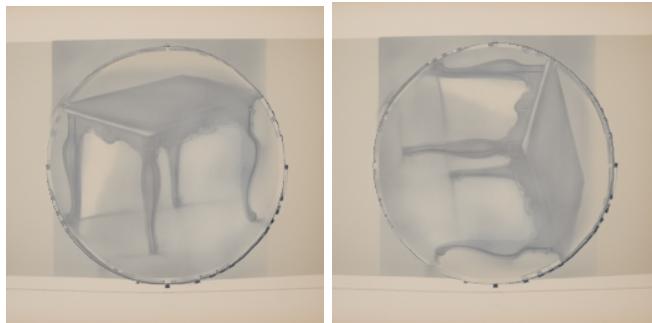
- 1)an_oil_painting_of_a_horse
2)an_oil_painting_of_a_snowy_mountain_village



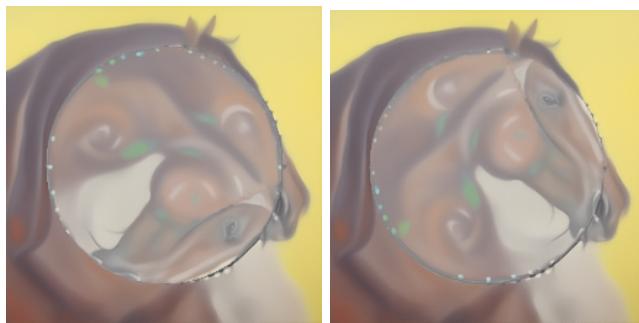
- 1)an_oil_painting_of_a_library
2)an_oil_painting_of_a_theater

```
{
  "source_dir": "/root/Diffusion-Assignment5-Synchronization/results_ambiguous",
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_Pisa_tower.png": 0.31652384996414185,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_a_goldfish.png": 0.2947809100151062,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_pencil_sketch_of_students_in_a_classroom.png": 0.34383535
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_painting_of_a_truck.png": 0.3285539746284485,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_canyon.png": 0.23265159130096436,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_maine_coon.png": 0.2430589646100998,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_painting_of_a_deer.png": 0.33307313919067383,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_the_queen_of_England.png": 0.32021838426589966,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_lithograph_of_a_waterfall.png": 0.3535483479499817,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_lithograph_of_a_table.png": 0.32811734080314636,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_snowy_mountain_village.png": 0.2051725
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_a_duck.png": 0.318379670381546,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_horse.png": 0.3193340003490448,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_painting_of_a_dog.png": 0.3112960457801819,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_a_car.png": 0.20351478457450867,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_pencil_sketch_of_flower_arrangements.png": 0.279093623161
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_photo_of_a_rabbit.png": 0.30437663197517395,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_theater.png": 0.27771463990211487,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/a_painting_of_a_horse.png": 0.3175801634788513,
  "/root/Diffusion-Assignment5-Synchronization/results_ambiguous/an_oil_painting_of_a_library.png": 0.34301841259002686,
  "score": 0.2986921198666096
}
```

Task 3
X_0 averaging with 90 degree inner rotation



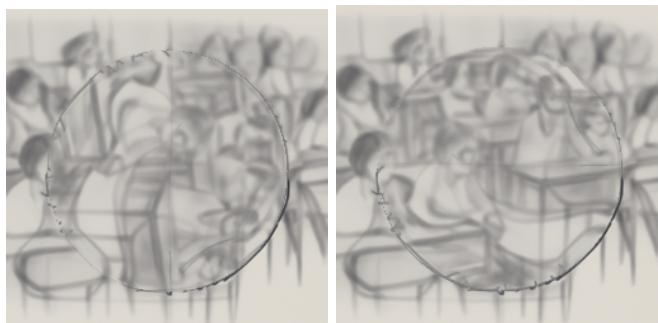
1)a_lithograph_of_a_table
2)a_lithograph_of_a_waterfall



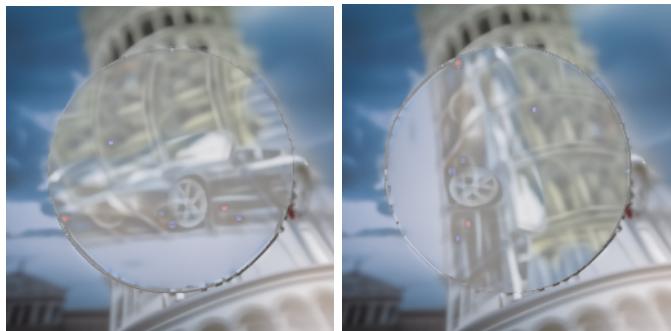
1)a_painting_of_a_dog
2)a_painting_of_a_horse



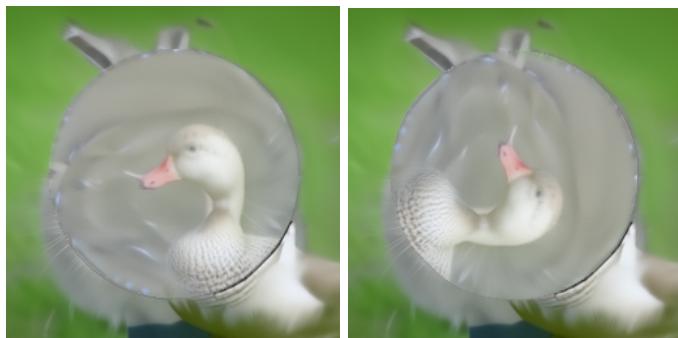
1)a_painting_of_a_deer
2)a_painting_of_a_truck



1)a_pencil_sketch_of_flower_arrangements
2)a_pencil_sketch_of_students_in_a_classroom



- 1)a_photo_of_a_car
2)a_photo_of_Pisa_tower



- 1)a_photo_of_a_duck
2)a_photo_of_a_rabbit



- 1)a_photo_of_a_goldfish
2)a_photo_of_the_queen_of_England



- 1)an_oil_painting_of_a_canyon
2)an_oil_painting_of_a_maine_coon



- 1)an_oil_painting_of_a_horse
2)an_oil_painting_of_a_snowy_mountain_village



- 1)an_oil_painting_of_a_library
2)an_oil_painting_of_a_theater

```

"source_dir": "/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2",
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_Pisa_tower.png": 0.285259485244751,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_a_goldfish.png": 0.264293372631073,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_pencil_sketch_of_students_in_a_classroom.png": 0.3295577,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_painting_of_a_truck.png": 0.3163747787475586,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_canyon.png": 0.25508952140808105,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_maine_coon.png": 0.2551669478416443,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_painting_of_a_deer.png": 0.28501230478286743,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_the_queen_of_England.png": 0.26419228315353394,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_lithograph_of_a_waterfall.png": 0.24112056195735931,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_lithograph_of_a_table.png": 0.2859567105770111,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_snowy_mountain_village.png": 0.2210822,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_a_duck.png": 0.31021788716316223,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_horse.png": 0.2880542576313019,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_painting_of_a_dog.png": 0.2834876775741577,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_a_car.png": 0.21075406670570374,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_pencil_sketch_of_flower_arrangements.png": 0.28108748793,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_photo_of_a_rabbit.png": 0.27933329343795776,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_theater.png": 0.2566792070865631,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/a_painting_of_a_horse.png": 0.3042147755622864,
"/root/Diffusion-Assignment5-Synchronization/results_ambiguous_image_inner_rotate_90_degree_bilinear_2/an_oil_painting_of_a_library.png": 0.2726685484777527,
"score": 0.27448016330599784

```

Results of x_t averaging and ϵ_{st} averaging can be found in the **results_ambiguous_image_inner_rotate_xts** and **results_ambiguous_image_inner_rotate_eps**