

SUPPLEMENTARY MATERIALS

ABSTRACT

This supplementary material contains information on the generated strokes for each sketch, the filenames of the sketch animation GIFs, the prompts used for the sketches, and illustrations of the separation process for individual objects.

1. SKETCH STROKES

The sketches and its strokes are provided in Table 1.

Table 1: Sketch Objects and Number of Strokes

Sketch Objects	Strokes
Basketball	16
Bear, Salmon, and Bird	32
Bicycle, Skateboarder, and Streetlight	32
Boat, Dolphin, and Dock	32
Butterfly and Rose	32
Child and Kite	24
Dog and Ball	32
Dog and Frisbee	16
Drone and Building	32
Zebra and Lion	32

2. GIF FILENAMES FOR SKETCH ANIMATIONS

Our GIF animation files are stored on the IEEE SigPort link, along with this supplementary PDF file. Table 2 provides information linking sketch titles to their corresponding GIF filenames. The animations generated as GIF videos can be viewed from the respective files. Table 3 includes the GIF filenames corresponding to each case in the ablation study. These filenames provide access to animations demonstrating the results for different configurations.

3. SKETCH PROMPTS

We present the prompts for each sketch images in Table 4.

4. SKETCH SEPARATION PROCEDURE

We present an illustration of sketch separation procedure in Table 5. The first column is input sketch image generated

by [1]. The second column is the pixel segmented results using off-the-shelf algorithm proposed by [2]. From the third to fifth column represent the first three refinement steps for our heuristic algorithms after pixel segmentation. The sixth column is the output of the algorithm and it produces a convex-hull for each objects. Using the convexhulls for each objects, we can easily separate the input sketch strokes into separate individual sketches. They are represented the last 3 columns in the table.

5. REFERENCES

- [1] Yael Vinker, Ehsan Pajouheshgar, Jessica Y. Bo, Roman Christian Bachmann, Amit Haim Bermano, Daniel Cohen-Or, Amir Zamir, and Ariel Shamir, "Clipasso: Semantically-aware object sketching," *ACM Trans. Graph.*, 2022.
- [2] Ahmed Bourouis, Judith Ellen Fan, and Yulia Gryaditskaya, "Open vocabulary semantic scene sketch understanding," in *Proceedings of the IEEE/CVF International Conference on Computer Vision*, 2024.

Table 2: GIF filenames; Ours vs. Baseline

Sketch Objects	Ours	Baseline
Bear, Salmon, and Bird	bear_salmon_bird_32_scaled_090502	bear_salmon_bird_32_scaled_010502
Bicycle, Skateboarder, and Streetlight	bicycle_skateboarder_streetlight22_32_scaled_090502	bicycle_skateboarder_streetlight22_32_scaled_010502
Boat, Dolphin, and Dock	boat_dolphin_dock03_32_scaled_090502	boat_dolphin_dock03_32_scaled_010502
Butterfly and Rose	butterfly_and_rose01_32_scaled_0904	butterfly_and_rose01_32_scaled_0104
Child and Kite	child_kite_24_scaled_0905	child_kite_24_scaled_0105
Dog and Ball	dog_ball02_32_scaled_0904	dog_ball02_32_scaled_0104
Dog and Frisbee	dog_frisbee_16_scaled_0904	dog_frisbee_16_scaled_0104
Drone and Building	drone_building_32_scaled_0904	drone_building_32_scaled_0104
Zebra and Lion	zebra_lion_32_scaled_0904	zebra_lion_32_scaled_0104

Table 3: GIF Filenames for Ablation Study Cases

Ablation Cases	GIF Filename
Baseline, Fig 7. (a)	basketball03_16_scaled_0106_2000
Both local and global, Fig 7. (b)	basketball03_16_scaled_0506_2000
global only, Fig 7. (c)	basketball03_16_scaled_1006_2000
Ours, local only, Fig 7. (d)	basketball03_16_scaled_0906_2000

Table 4: Sketches and Prompts

Sketch	Prompts
	A basketball player dribbles the ball down low. The ball is bound from top to bottom and bottom to top.
	A bear in a river catches a jumping salmon with dynamic, lifelike movements, while a bird flies above, creating fluid and natural interactions.
	The skateboarder performs jumps and tricks under the streetlight, while the streetlight stands still, shining its light. The bicycle glides forward as if sliding effortlessly.
	A sailboat glides on the water with its sails full of wind, a dolphin leaps ahead, and a wooden dock stands in the background, creating a lively ocean scene.
	A butterfly flies to a rose, flaps its wings and flits around, but the rose stays still.
	A young child runs forward while flying a kite. The kite soars above the child's head, following them as they run.
	The puppy plays by rolling the ball around. The ball on the floor moves wherever the puppy nudges it.
	The puppy chases after the flying frisbee. The frisbee is flying low, and the puppy runs quickly toward it.
	The building remains stationary, while the drone moves up and down, flying around the building.
	A lion sprints with fierce determination in pursuit of a zebra, both animals captured mid-motion, emphasizing the intensity and speed of the chase.

Table 5: Object Separation Illustration

Sketch	Seg. In	Ref. Step1	Ref. Step2	Ref. Step3	Seg. Out	Obj#1	Obj#2	Obj#3
								
								
								
								
								
								
								
								
								
								