AutoFlow: Learning a Better Training Set for Optical Flow
SUPPLEMENTARY MATERIALS

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Thanks for checking the supplementary materials, which provide details about the rendering hyperparameters and more samples. **Please watch the included webpage for more video results.**

1. Rendering Hyperparameters

During training, we tune a number of hyperparameters that dictate data generation, including the shape, size, and position of masks, the complexity and magnitude of motion, and the visual effects. Respective values are uniformly sampled from the specified ranges, and the ranges are hyperparameters to learn. $\mathcal{U}$ denotes a random number uniformly sampled from $[-1, 1]$.

Hyperparameters for polygon masks:

- minimum and maximum number of sides

- maximum size of the hole's bounding box diagonal, relative to the polygon's

- number of polygon subdivisions

Hyperparameters for all foreground masks:

- minimum and maximum size of the object's bounding box diagonal, relative to the image diagonal

- minimum and maximum object center location, relative to image dimensions

- probability of applying mask blur

- strength of the mask blur

Hyperparameters for motion

- scale strength p_s (≥ 1), with scale sampled as $p_s{}^{\mathcal{U}}$

- rotation strength p_r, with rotation angle sampled as $\pi \cdot p_r \cdot \mathcal{U}$

- translation strength p_t, with translation in dimension d sampled as $\text{ImageSize}_d \cdot p_t \cdot \mathcal{U}$

- grid strength p_g, where each grid vertex offset in dimension d is sampled as $0.5 \cdot \text{CellSize}_d \cdot p_g \cdot \mathcal{U}$

- size of the grid

Hyperparameters for visual effects:

- probability of applying motion blur

- strength of the motion blur

- probability of applying fog

- average density of the fog

Hyperparameters for RangAugment:

- number of augmentations per iteration

- strength level for all the augmentations

2. More Samples

Figure 1 shows some more samples of the image pairs and flow field. **Please click the included webpage to see the gif images.**
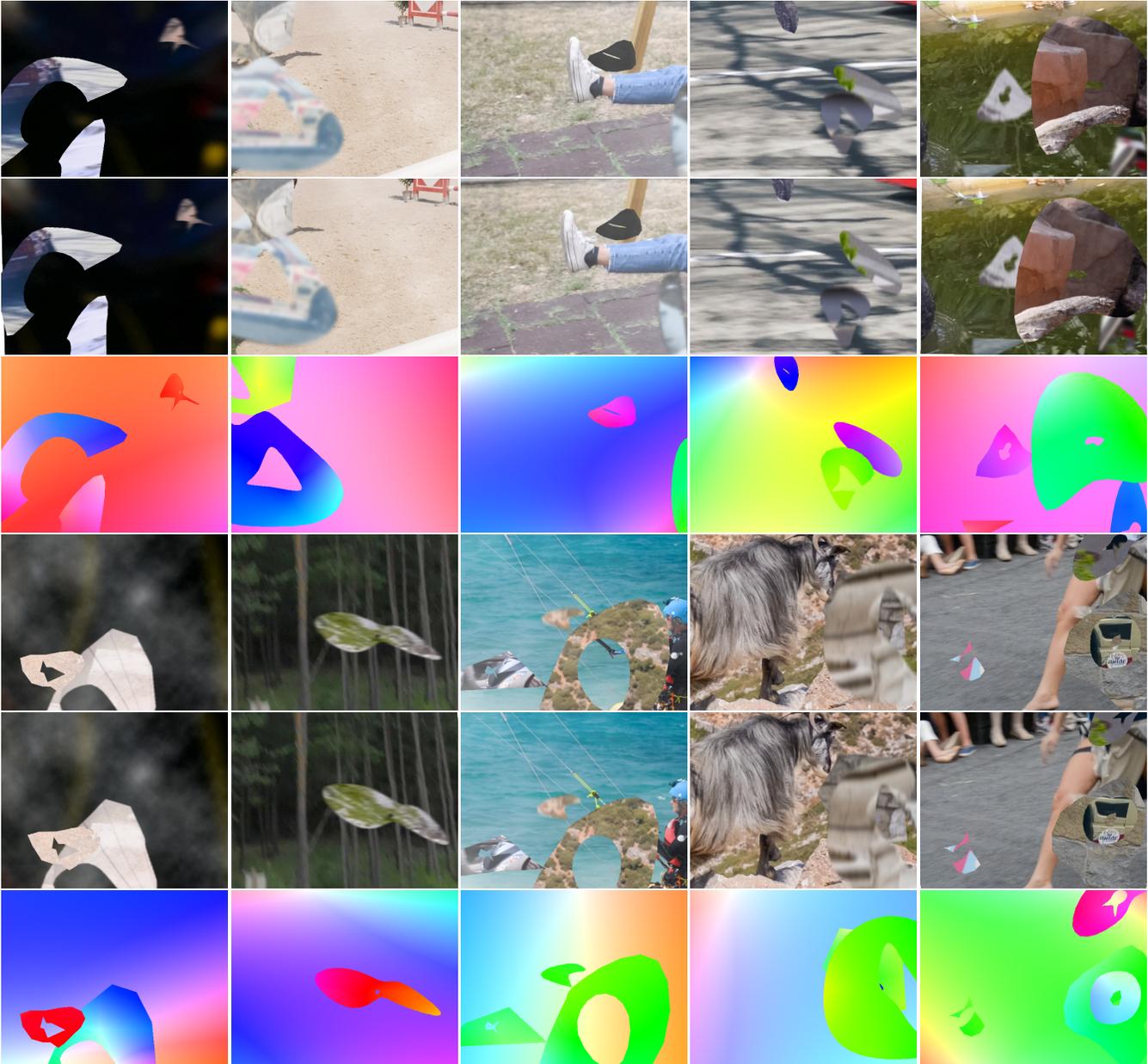
Figure 1. **More samples of synthetic data**. First/fourth row: first image; second/fifth row: second image; third/sixth row: visualized optical flow. **Please click the included webpage to see the gif images.**