

Weekly Report

February 2, 2018

1 2018.1.31

1.1 Random sketch deformation

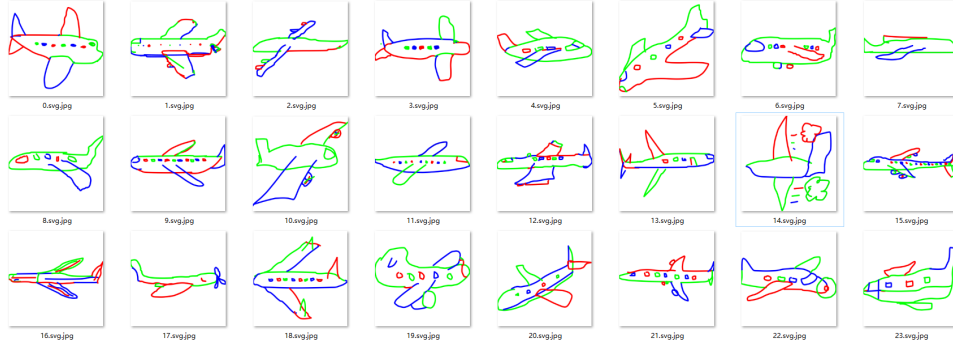


Figure 1: before deformation

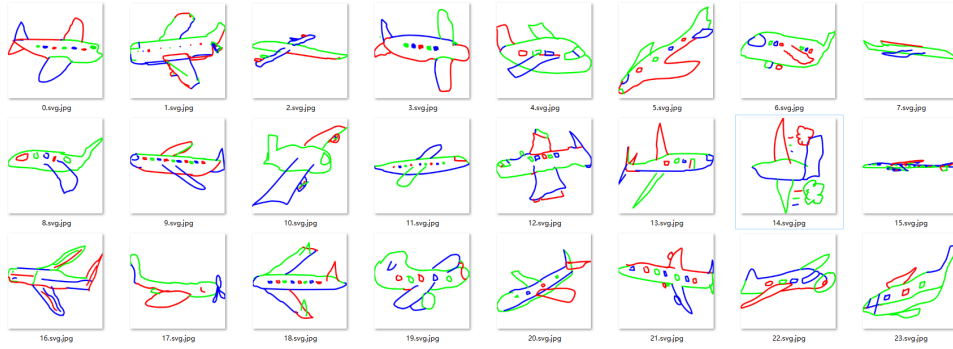


Figure 2: after deformation(with a fixed jittering range (0.1,0.3))

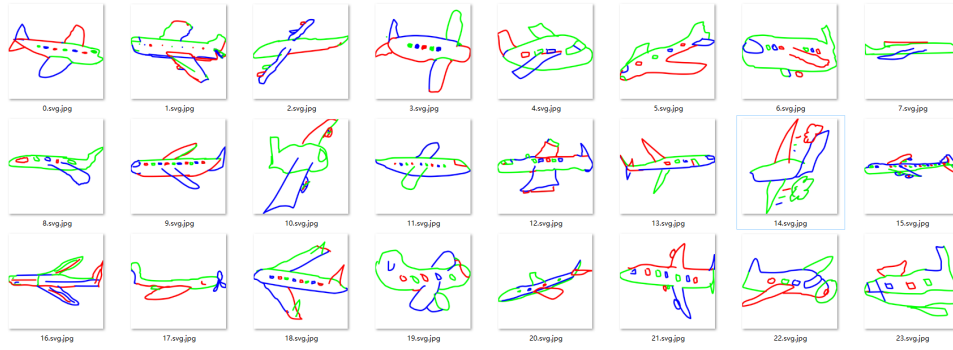


Figure 3: after deformation(adjust jittering range according to sample width and height)

1.2 Stroke removal

Design a proper weight. When number of strokes in a sketch is fewer, the strokes are tend to be preserved.

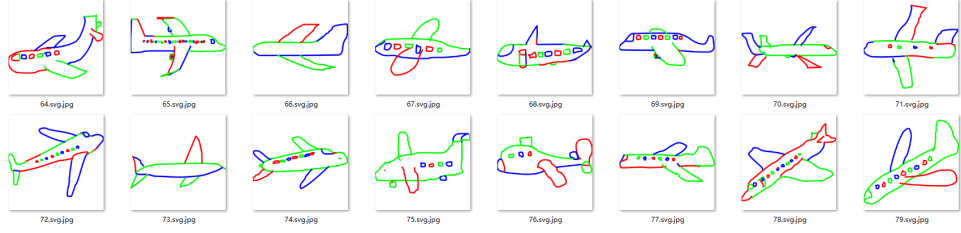


Figure 4: before deletion

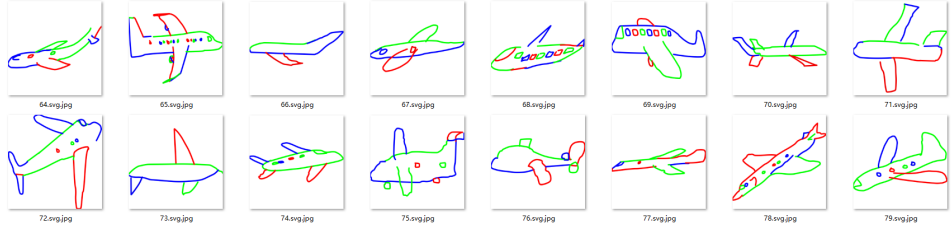


Figure 5: after deletion(remove 40% strokes)

1.3 Data augmentation experiments

Data augmentation:

1. random deformation 3 times(range(0.1,0.3))
2. stroke removal 3 times(0.2,0.4,0.6)

| micro PointNet P1 | micro PointNet P2 | PointNet P3 | testing acc |
|---------------------|-----------------------|-------------------------|-------------|
| shared mlp(8,16,64) | shared mlp(32,32,128) | shared mlp(64,128,1024) | 71.7% |

Table 1: Trials.

| P1 input | P1 output | P2 input | P2 output |
|----------|-----------|---------------|-----------|
| 512x30x3 | 512x2 | 256x100x(3+2) | 256x32 |

Table 2: Trials.

Data augmentation:

1. random deformation 3 times(range(0.1,0.3))
2. stroke removal 3 times(0.2)

| | | | |
|---------------------|-----------------------|-------------------------|-------------|
| micro PointNet P1 | micro PointNet P2 | PointNet P3 | testing acc |
| shared mlp(8,16,64) | shared mlp(32,32,128) | shared mlp(64,128,1024) | 73.5% |

Table 3: Trials.

1.4 TO DO:

| P1 input | P1 output | P2 input | P2 output | change |
|----------|-----------|---------------|-----------|----------------------------------|
| 512x30x3 | 512x2 | 256x100x(3+2) | 256x29 | current |
| 512x30x2 | 512x2 | 256x100x(2+2) | 256x29 | remove stroke order |
| 512x20x3 | 512x2 | 256x100x(3+2) | 256x29 | reduce group 1 size |
| 512x10x3 | 512x2 | 256x100x(3+2) | 256x29 | reduce group 1 size |
| 256x30x3 | 256x2 | 128x50x(3+2) | 128x29 | reduce group1 sampling frequence |
| 128x30x3 | 128x2 | 64x25x(3+2) | 64x29 | reduce group1 sampling frequence |
| 512x30x3 | 512x2 | - | - | reduce group2 |

Table 4: To do.

1. Run TU-Berlin dataset(sampling sketches with space)
2. Reaugment data.
3. Sample sketch into (512,256,128).

2 2018.2.1

所有训练只进行一次，没有进行数据增强。

| P1 input | P1 output | P2 input | P2 output | acc |
|----------|-----------|---------------|-----------|--------|
| 512x30x3 | 512x2 | 256x100x(3+2) | 256x29 | 69.2% |
| 512x30x2 | 512x2 | 256x100x(2+2) | 256x29 | - |
| 512x20x3 | 512x2 | 256x100x(3+2) | 256x29 | 69.2% |
| 512x10x3 | 512x2 | 256x100x(3+2) | 256x29 | 69.2% |
| 256x30x3 | 256x2 | 128x100x(3+2) | 128x29 | 70.6% |
| 128x30x3 | 128x2 | 64x100x(3+2) | 64x29 | 69.55% |
| 64x30x3 | 128x2 | 16x100x(3+2) | 64x29 | 59% |
| 512x30x3 | 512x2 | - | - | - |

Table 5: Trials.