

16824 - Visual Learning and Recognition

Assignment1

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D. Pre-train Model

- 1). The training logs (with losses in different iterations).

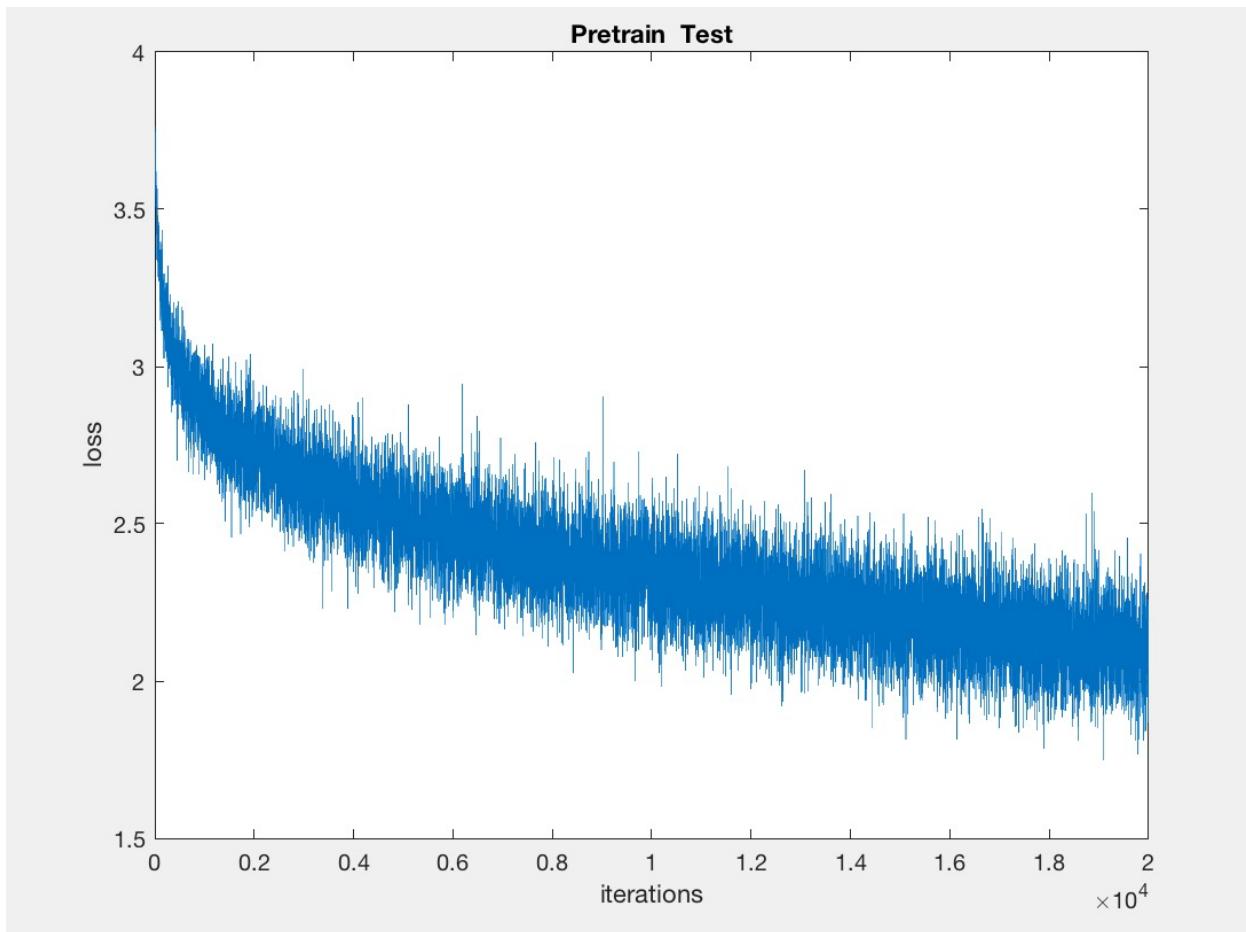


fig1: Pretrain Loss vs Iterations

2). The final numbers(after 10 epoch)

Mean: 29.061

Median: 24.324

11.25: 23.358

22.50: 46.722

30.00: 59.136

3)Visualize the prediction results (10 sets).

The first and third rows are my trained results. The second and forth rows are my test images.

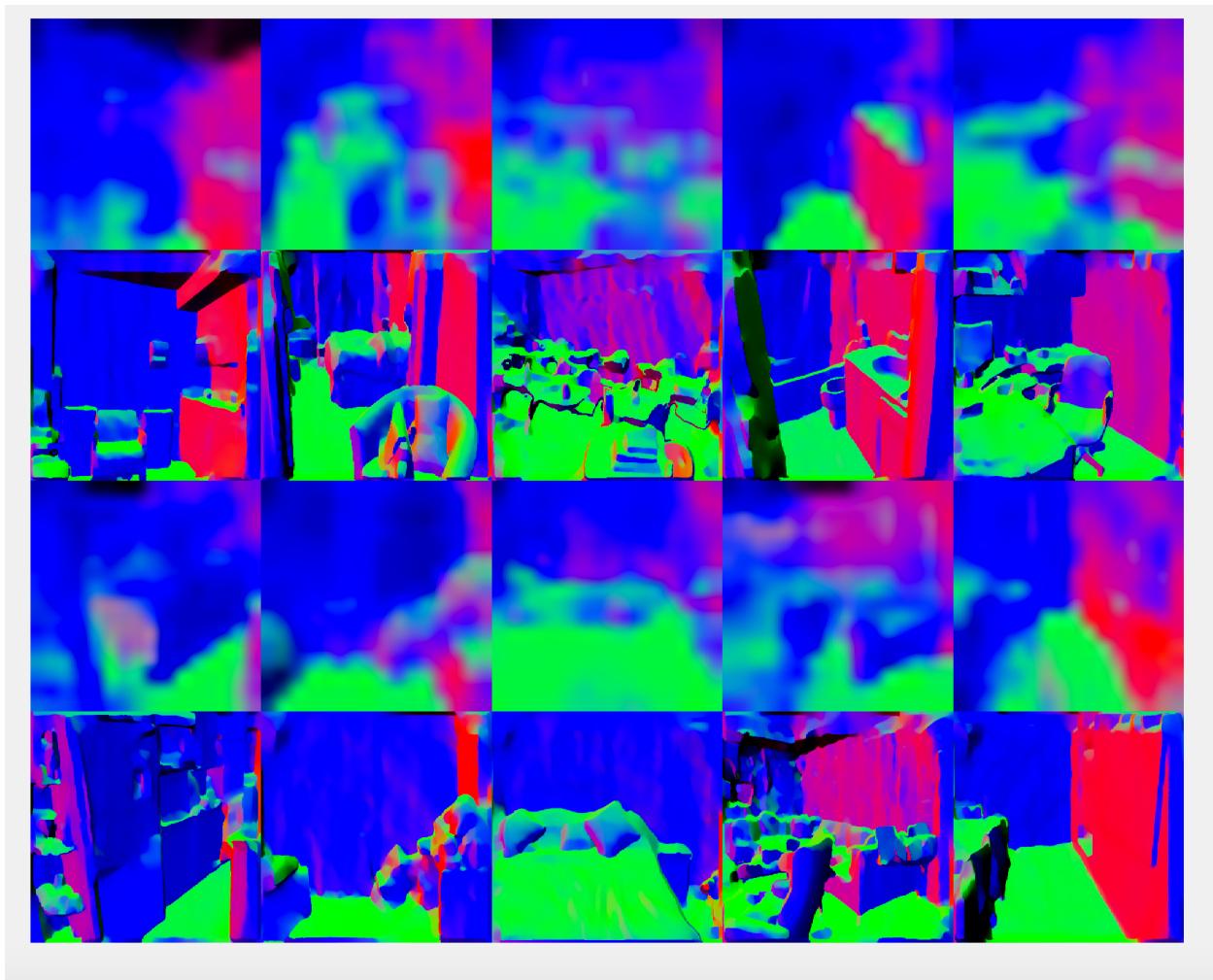


fig2: Visualization of Results

E.Training FCN from scratch

1) The training logs (with losses in different iterations).

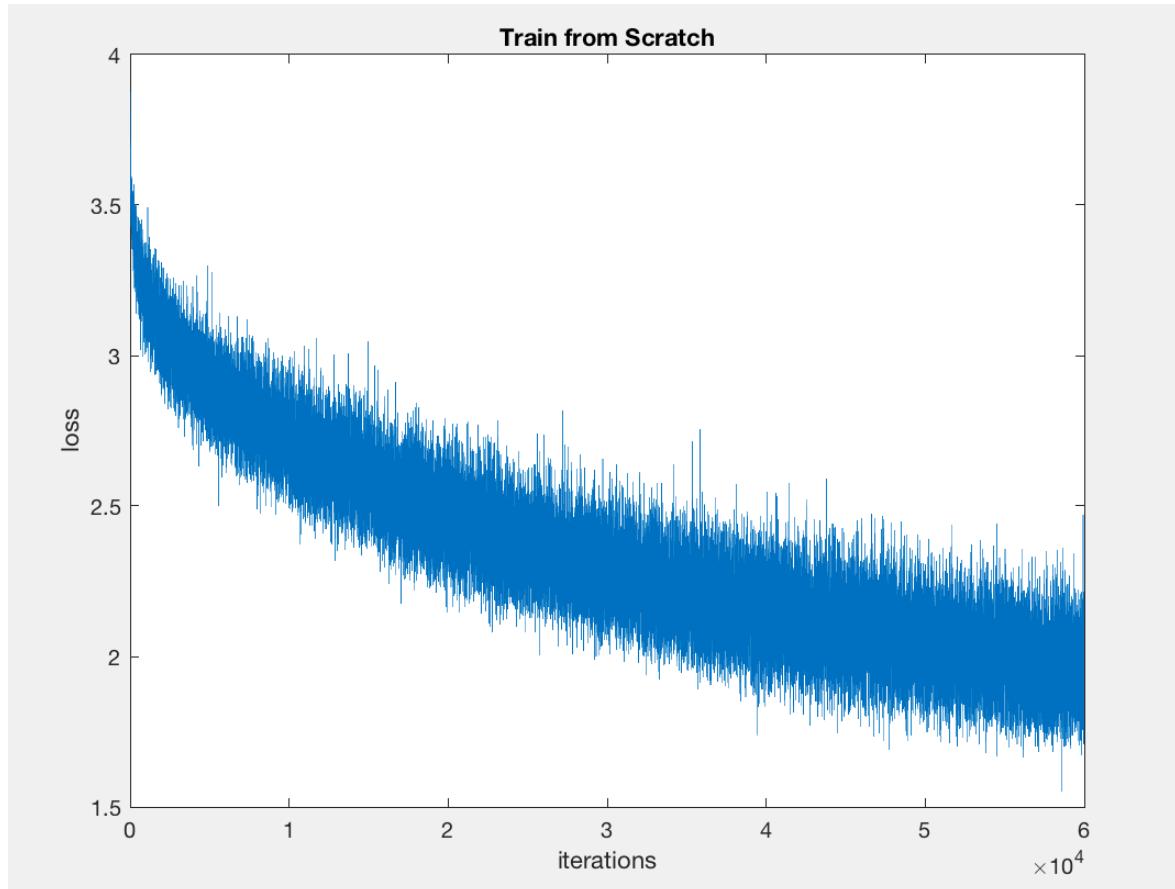


fig3: Train from Scratch Loss vs Iterations

2). The final numbers(after 5 epoch)

Mean: 33.480

Median: 30.366

11.25: 15.501

22.50: 36.396

30.00: 49.385

The final numbers(after 15 epoch)

Mean: 30.409

Median: 25.637

11.25: 21.580

22.50: 44.550

30.00: 56.908

The final numbers(after 30 epoch)

Mean: 29.700

Median: 24.353

11.25: 23.622

22.50: 46.811

30.00: 58.723

3) Visualize the prediction results (10 sets).

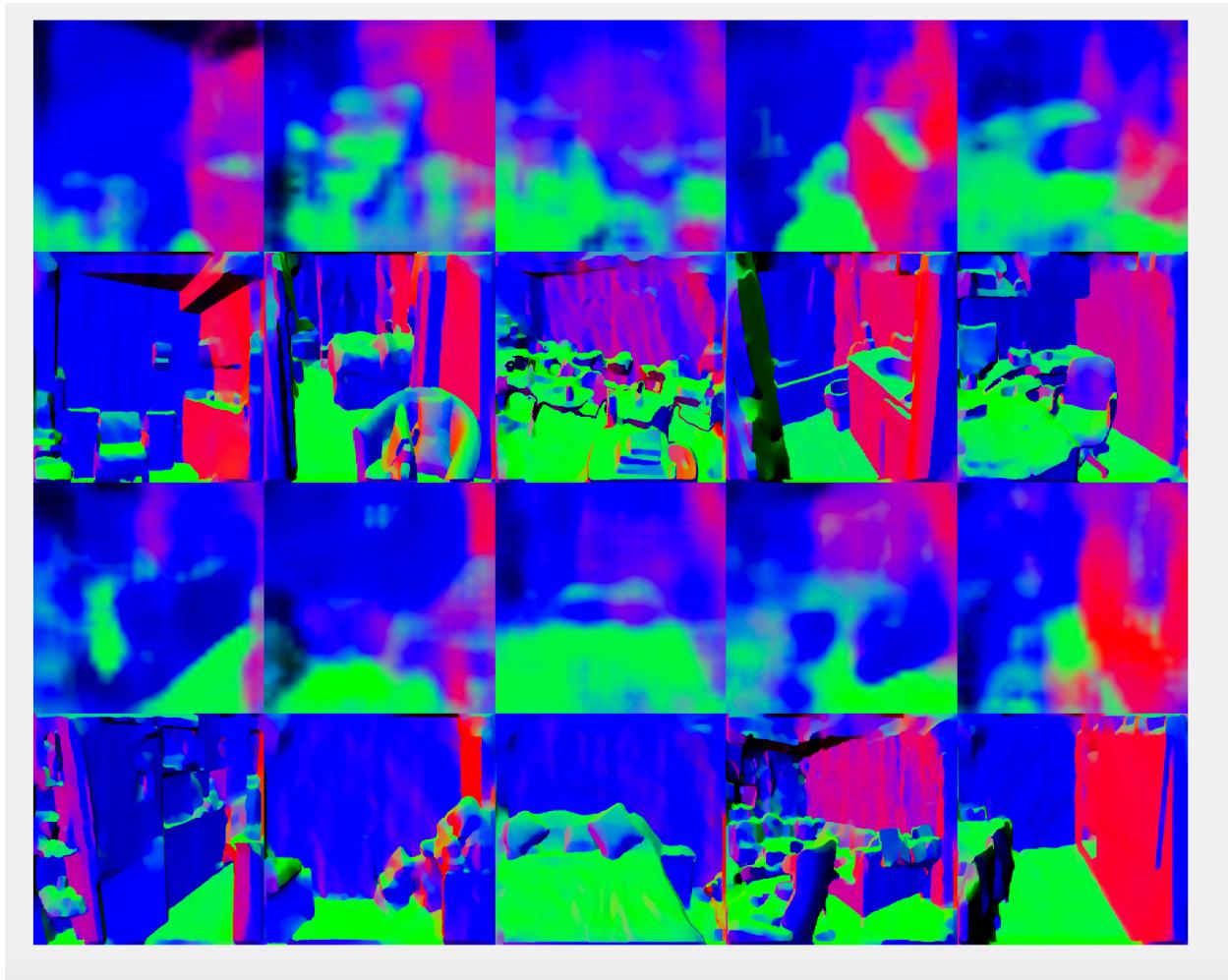


fig4: Visualization of Results

The first and third rows are my trained results. The second and forth rows are my test images (after 30 epochs).

4) Visualize Conv1 filters and compare to the one in task 1

Filter in task 1(after 10 epochs):



Filter in train from scratch(after 30 epochs):



Differences: In the filter in task1, we could see that it could identify edges and simple shapes pretty clear. In comparison, although the filter in "train from scratch" seems could also identify some edges, but it is in general vague and most part of the filter lack functions.