hw5-1

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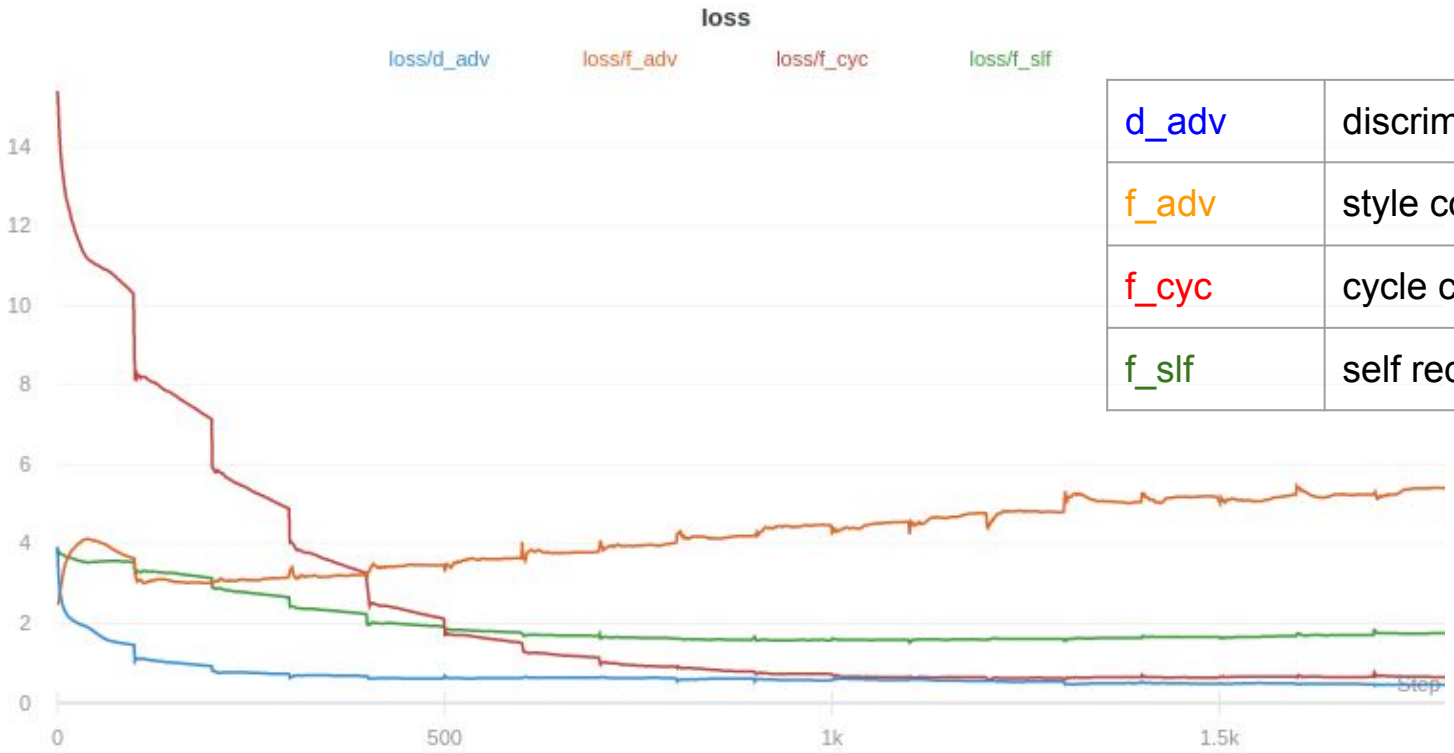
Configuration

We set batch size to 128. And also change layer to 3, and also cycle consistency loss factor to 0.75. Other settings follows the default.

Command : `main.py --do_train -batch_size 128 -num_layers 3 -cyc_factor 0.75`

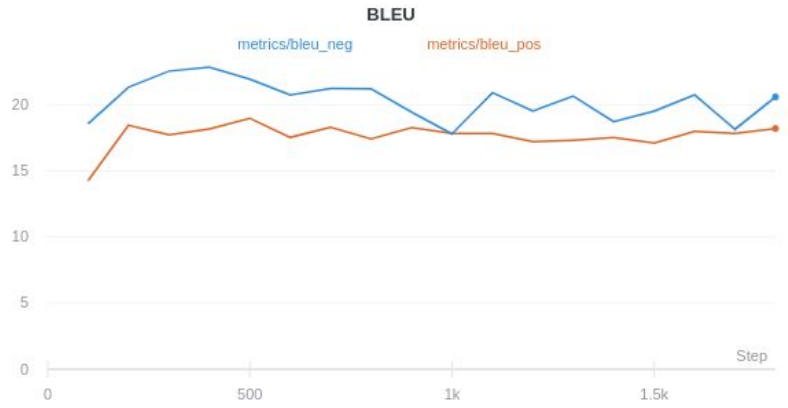
Loss

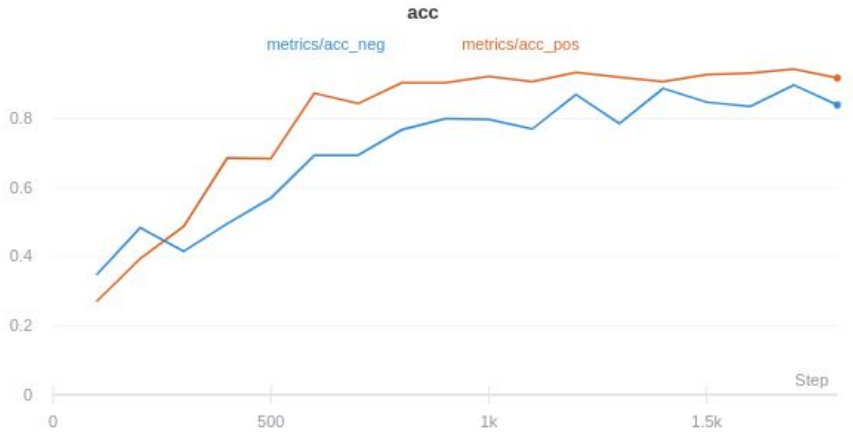


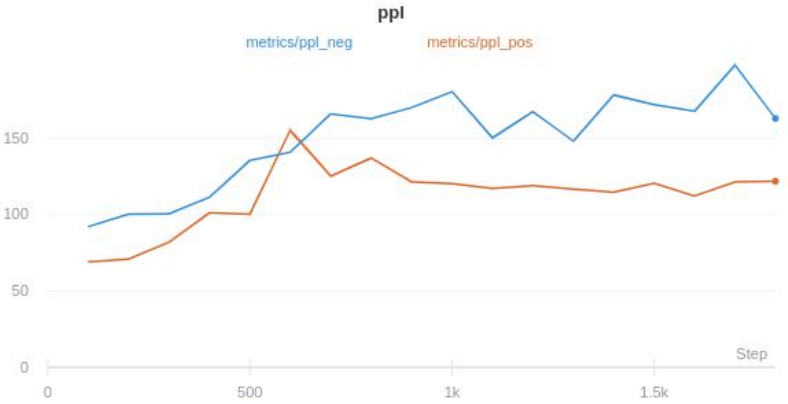
d_adv	discriminator loss
f_adv	style controlling loss
f_cyc	cycle consistency loss
f_slf	self reconstruction loss

Evaluation - Metrics

	pos	neg	avg
accuracy	0.918	0.84	0.879
ref-bleu	18.195	20.581	19.388
perplexity	121.886	162.994	142.44







Evaluation - Good Examples

```
******************** neg sample ********************
[gold] the garlic bread was bland and cold .
[raw ] the garlic bread was bland and cold .
[rev ] the garlic bread was delicious and superb .
```

```
******************** neg sample ********************
[gold] owner : a very rude man .
[raw ] owner : a very rude man .
[rev ] owner : a very friendly man .
```

```
******************** pos sample ********************
[gold] the wine list was the best part .
[raw ] the wine list was the best part .
[rev ] the wine list was the worst part .
```

```
******************** pos sample ********************
[gold] i loved it and will definitely be back !
[raw ] i loved it and will definitely be back !
[rev ] i hated it and will not be back !
```

Evaluation - Problematic Examples

```
******************** neg sample ********************
[gold] i do not like the size of the dance floor .
[raw ] i do not like the size of the dance floor .
[rev ] i do place like the size of the dance floor .
```

“place” doesn’t make sense in sentence

```
******************** pos sample ********************
[gold] i love their fresh juices as well .
[raw ] i love their fresh juices as well .
[rev ] i hate three there acknowledge as just .
```

can not understand what the sentence mean

hw5-2

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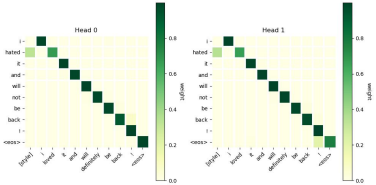
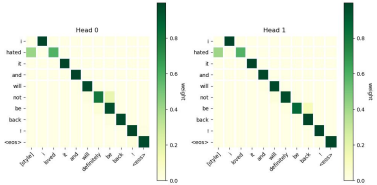
problem1

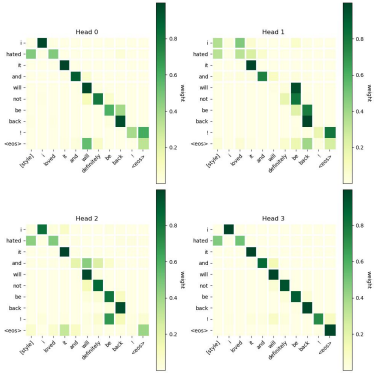
layer 0



layer 1



layer 3

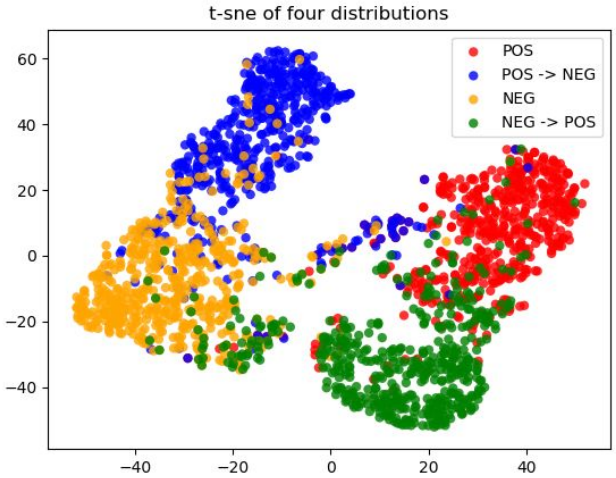


[gold] i loved it and will definitely be back !
[rev] i hated it and will not be back !

在每個句子中，可以改變 style 的字詞在句子裡的位置不一定是固定不變。所以 style token isn't being attented to while decoding 可能的原因就是因為缺少了位置這個關係。但因為模型會 attending to 其他 output，所以就算缺乏了 style token 的 attention 仍然可以成功 decode。

在圖中，style token 的 attention 雖然很不明顯，但在第二個 output 時仍有一點，我們推測的原因可能是在 training set 中，第二個字很常會是關鍵的 style 字詞。所以才讓模型學到了一點點的 attention 資訊。

problem2



POS and NEG->POS look close.
NEG and POS->NEG look close.

I think the reason for it is because the model can success transfer to the target domain.
But there are still some difference between the origin sentence and the sentence which transfer from other domain.
That's why they just looks close but don't have the same distributions.

problem3

```
***** 2-3: mask input *****
-
[ORG] i loved it and will definitely be back !
[REV] i hated it and will not be back !
-
[ORG] <unk> loved it and will definitely be back !
[REV] i hated it and will not be back !
-
[ORG] i <unk> it and will definitely be back !
[REV] i hate it and will not be back !
-
[ORG] i loved <unk> and will definitely be back !
[REV] i loved it and will not be back !
-
[ORG] i loved it <unk> will definitely be back !
[REV] i hated it will not be back !
-
[ORG] i loved it and <unk> definitely be back !
[REV] i hated it and i not be back !
-
[ORG] i loved it and will <unk> be back !
[REV] i hated it and will not be back !
-
[ORG] i loved it and will definitely <unk> back !
[REV] i hated it and will not be back !
-
[ORG] i loved it and will definitely be <unk> !
[REV] i hated it and will not be back !
***** 2-3 end *****
```

1. 在模型中，其有學到時態上的不一樣，如果時態的資訊不見了，他便會 產生不同的時態結果。
2. 但其並沒有學習到連接詞的概念，如果 input 缺少了連接詞，在結果上並不會自動補上去。
3. 其他部分都學的還不錯，大部份的狀況下在 mask 之後，依然可以靠前後文的資訊輸出正確的結果。

hw5-3

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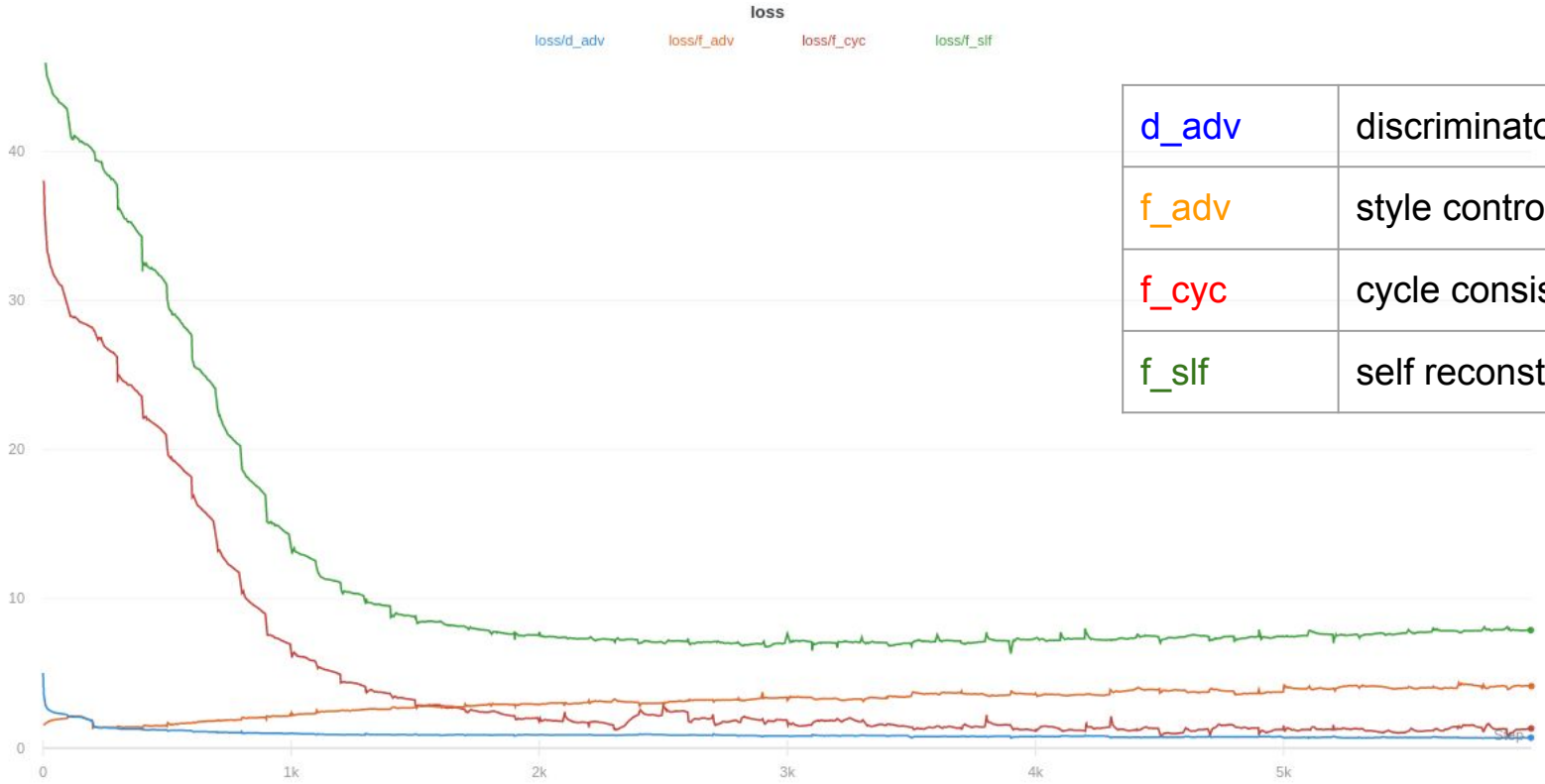
Configuration

- We use dataset that included imdb and yelp.
- We set max sentence length to 32.
- We set number of layer to 5.
- Cycle consistency loss factor : 0.5
- Self reconstruction loss factor : 0.75
- Training iteration : 6000
- Batch size : 32

Other settings follows the default.

Command : `main.py --do_train -data_path data/mix/ -max_length 32 -num_layers 5 -cyc_factor 0.5 -slf_factor 0.75 -train_iter 6000 -batch_size 32`

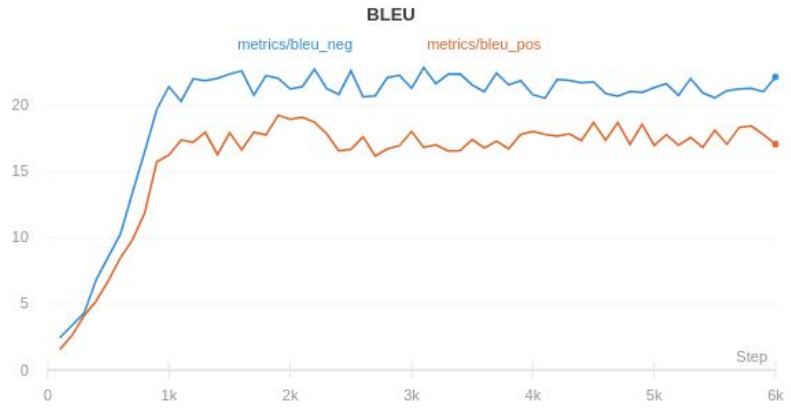
Loss

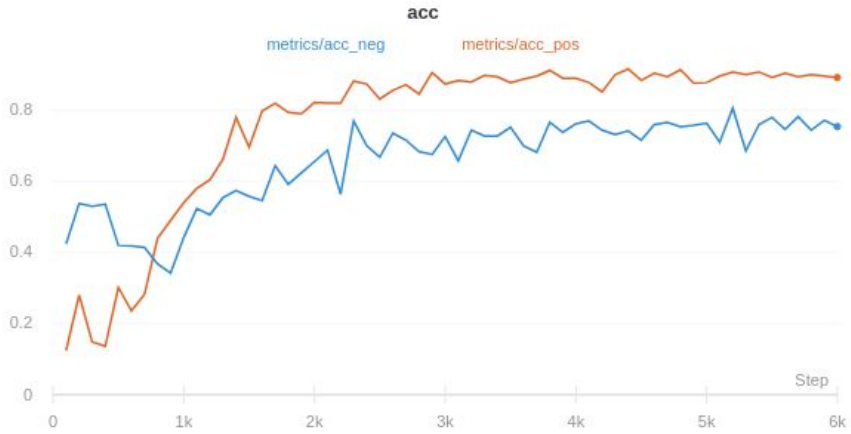


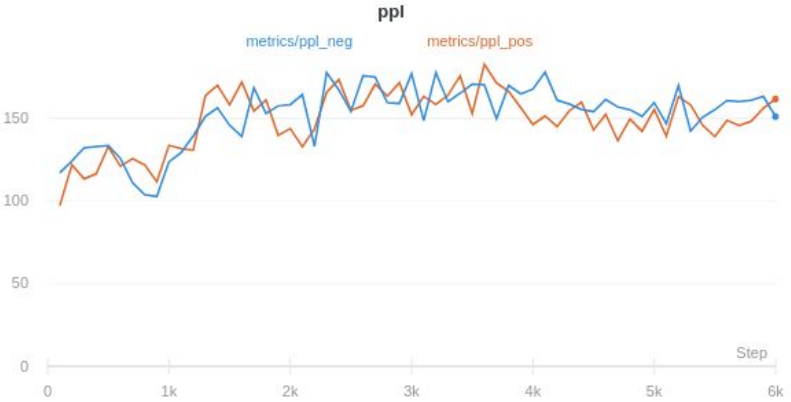
d_adv	discriminator loss
f_adv	style controlling loss
f_cyc	cycle consistency loss
f_slf	self reconstruction loss

Evaluation - Metrics

	pos	neg	avg
accuracy	0.892	0.754	0.823
ref-bleu	17.092	22.178	19.635
perplexity	161.788	151.166	156.477







Evaluation - Good (same sentence as 5-1)

```
******************** neg sample ********************
[gold] the garlic bread was bland and cold .
[raw ] the garlic bread was bland and cold .
[rev ] the garlic bread was amazing and perfect .
```

```
******************** neg sample ********************
[gold] owner : a very rude man .
[raw ] owner : a very rude man .
[rev ] owner : a very knowledgable man .
```

```
******************** pos sample ********************
[gold] the wine list was the best part .
[raw ] the wine list was the best part .
[rev ] the wine list was the worst part .
```

```
******************** pos sample ********************
[gold] i loved it and will definitely be back !
[raw ] i loved it and will definitely be back !
[rev ] i hated it and will not be back !
```

Evaluation - Problematic (same sentence as 5-1)

```
******************** neg sample ********************
[gold] i do not like the size of the dance floor .
[raw ] i do not like the size of the dance floor .
[rev ] i do definitely like the size of the dance floor .
```

sentence become formal

```
******************** pos sample ********************
[gold] i love their fresh juices as well .
[raw ] i love their fresh juices as well .
[rev ] i mean their fresh juices as boring .
```

though “boring” still not best word to describe juice but the result is better compare to 5-1