

Project 3: Sequence Modeling

CSE 849 Deep Learning (Spring 2025)

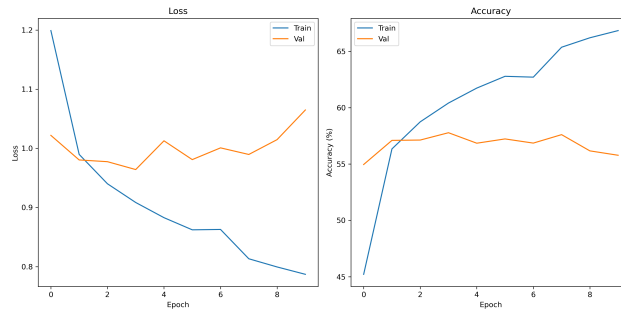
Arman Khoshnevis

March 2025

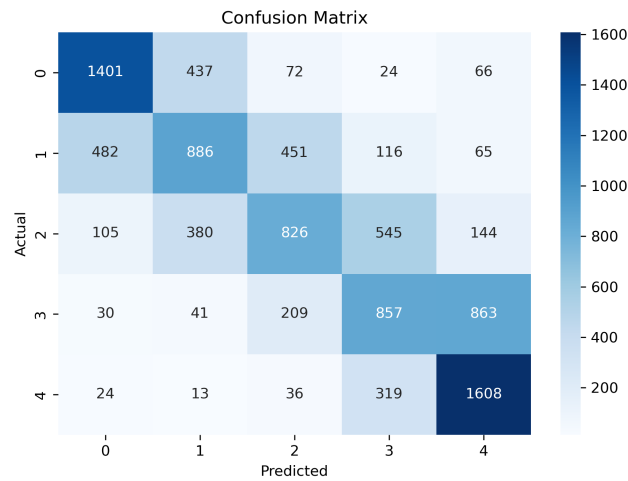
1 Review Rating Prediction

Here are the hyper-parameters used for this part:

```
emb_dim = 50
batch_size = 64
rnn_dropout = 0.25
num_rnn_layers = 2
lr = 5e-4
num_epochs = 10
```



(a)



(b)

Figure 1: (a) Training and validation losses and accuracies and (b) confusion matrix for the first task (review rating prediction).

2 Translation to Pig Latin using Transformers

Here are the hyper-parameters used for this part:

```
num_tokens = 30
emb_dim = 100
batch_size = 100
lr = 1e-4
num_epochs = 200
```

The ultimate losses and accuracies obtained are

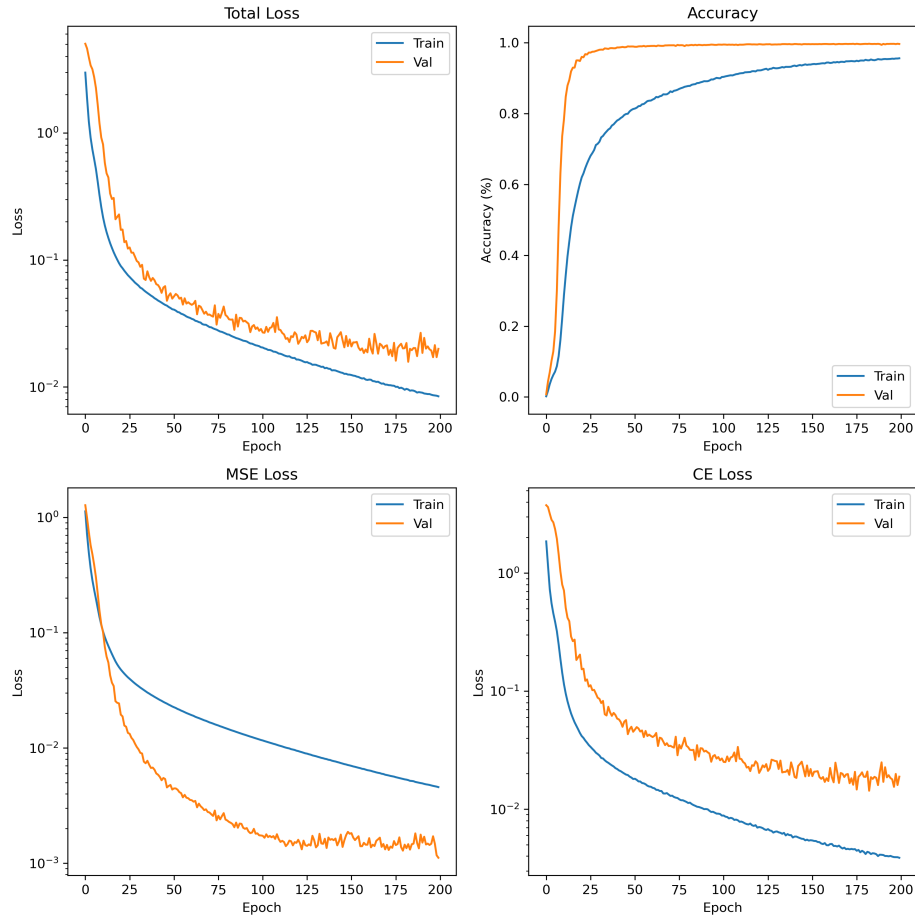


Figure 2: Losses and accuracies for the translation to Pig Latin task.

The ultimate results obtained at the end of the run are as follows:

- Final accuracy
 - Train: 0.95
 - Val: 1.00
- Final losses
 - Train MSE: 0.005
 - Train CE: 0.004
 - Val MSE: 0.001