Forecasting the spread of COVID-19 using deep learning

Jake Cordery - supervised by Richard Bingham

1 Supporting Information Appendix

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Epoch 20
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Current training loss: 0.028291776946607724
Current validation loss: 0.03645380547042727
New lowest val loss: 0.03645380547042727
```
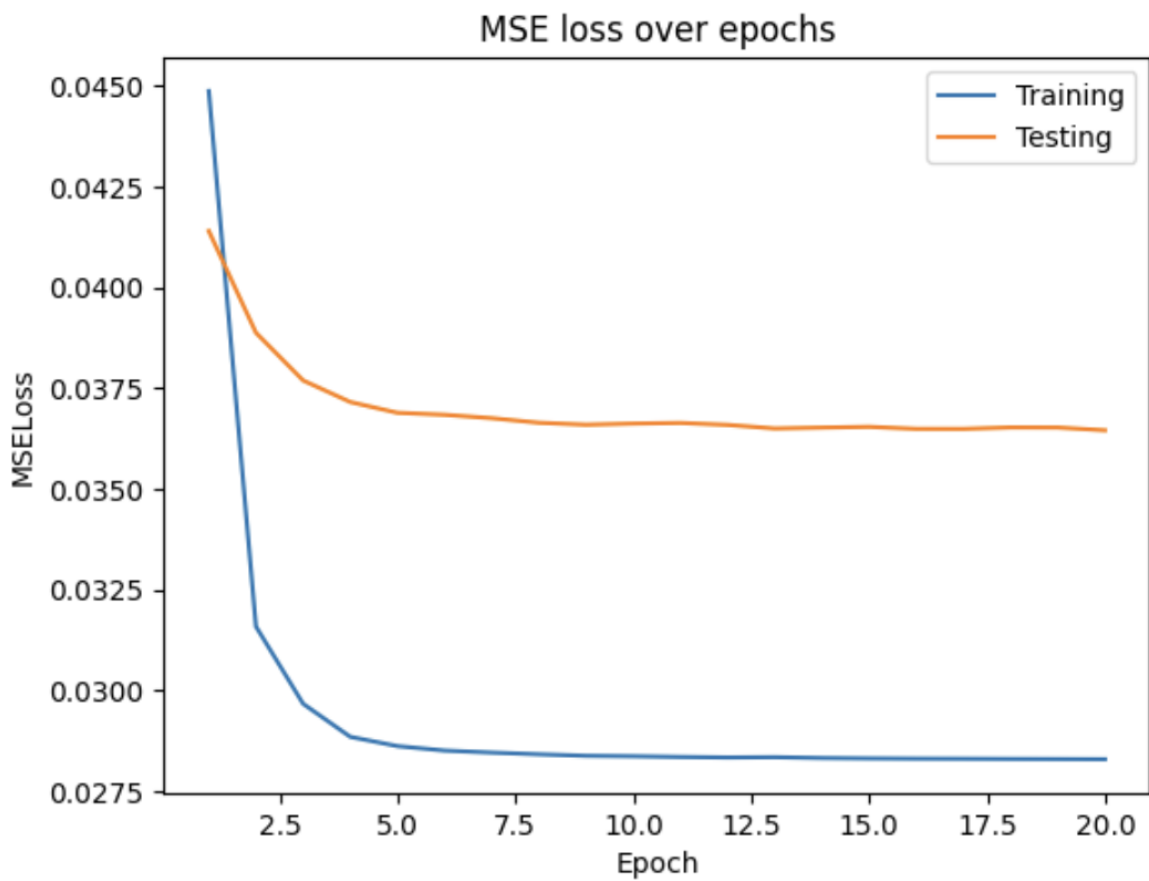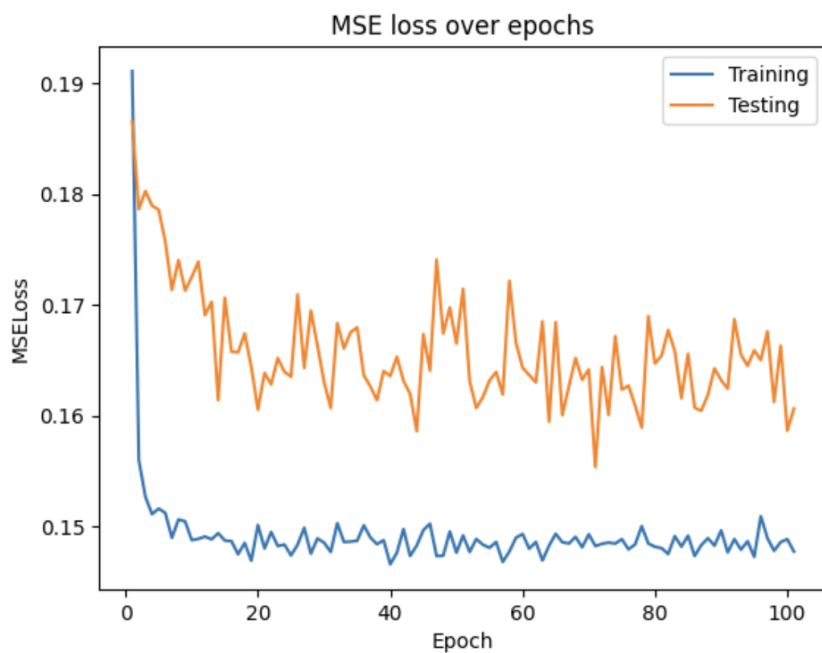

Figure 1: Training and validation of a two layer LSTM. $f \simeq 0.7$ (overfit).

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Average loss epoch 100: 0.14776950912882192
Average test loss: 0.16065415697438376
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Average loss epoch 100: 0.02418968972367372
Average test loss: 0.023154459414737566
```
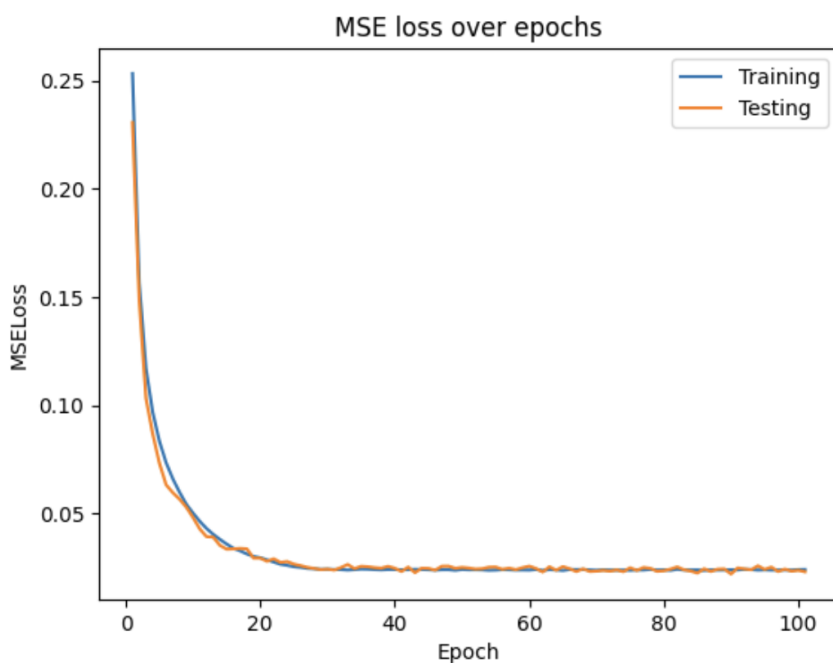

Figure 2: 1st image shows training without fully connected layer on 21 input days and 128 hidden size with GCN. 2nd image uses the same setting but adds a fully connected layer.

```
Average loss epoch 3: 0.15278653414013552
Average test loss: 0.15567249330607327
Average test loss: 0.09989346098154783
```
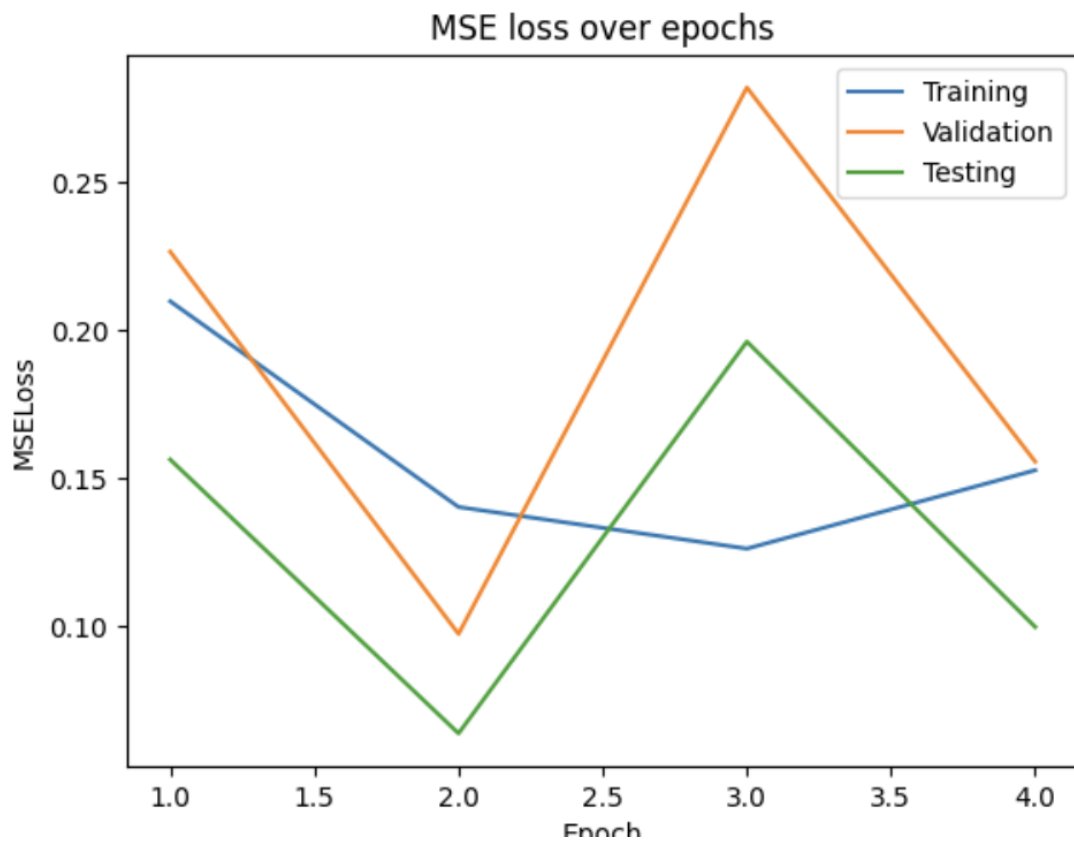

Figure 3: 1 layer GCN, 1 layer LSTM model, displaying erratic training dynamics, taking a very long time per epoch (~ 20 minutes), for no performance gains.