Progress Report COMP6321: Baseline performance

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Global settings:

- Train:val (0.8 : 0.2) split
- Number of samples combined for train + val = 1 000 000

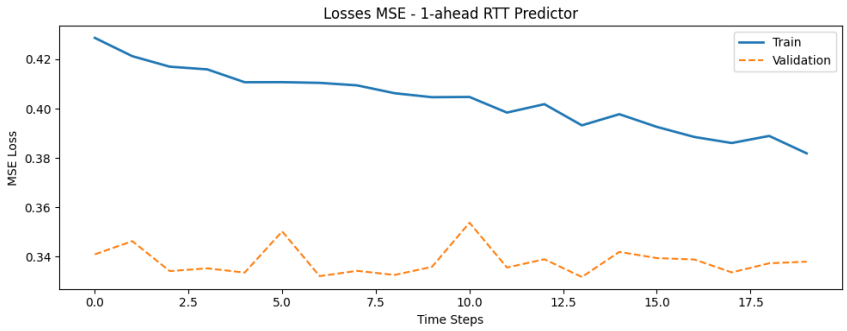
1 LSTM: 1-step forward

1.1 Hyperparameter settings:

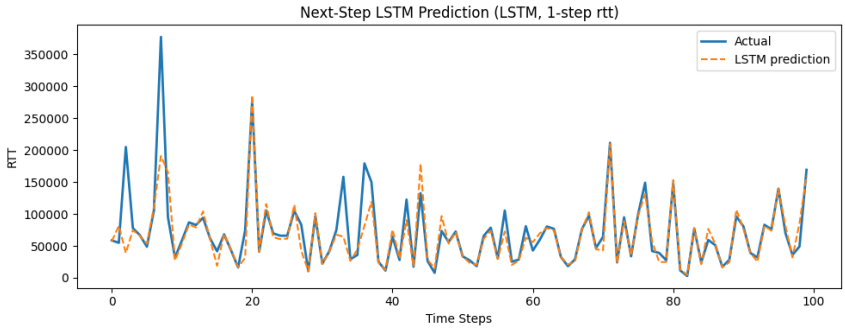
```
SEQ_LEN = 25        # length of input sequence (timesteps)
HIDDEN_DIM = 128
NUM_LAYERS = 3
BATCH_SIZE = 128
LR = 1e-3
EPOCHS = 20
DEVICE = torch.device("cuda" if torch.cuda.is_available() else "cpu")
SEED = 42
```

1.2 RTT

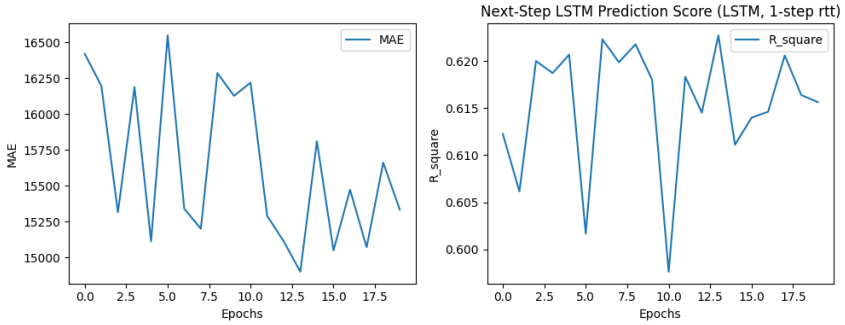
- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:

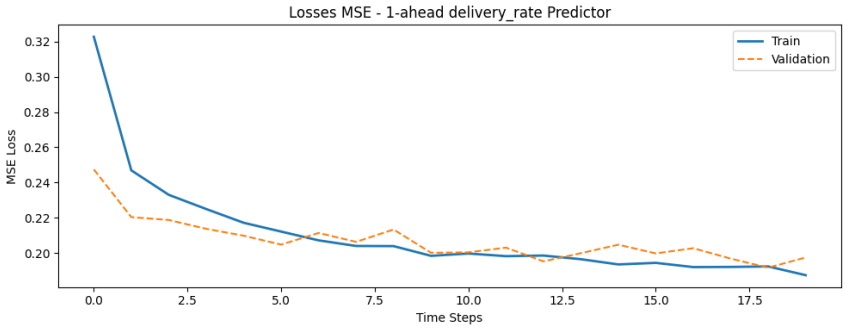


- **Prediction accuracy** on validation set over training epochs

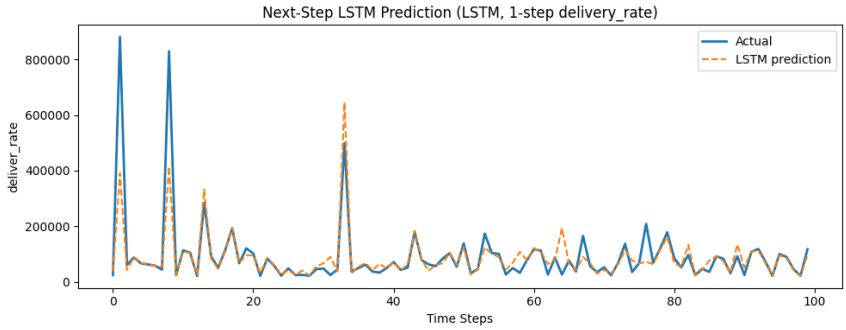


1.3 Delivery Rate

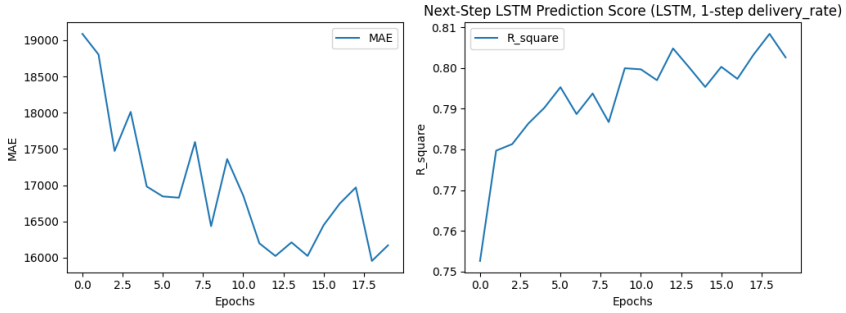
- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:



- **Prediction accuracy** on validation set over training epochs



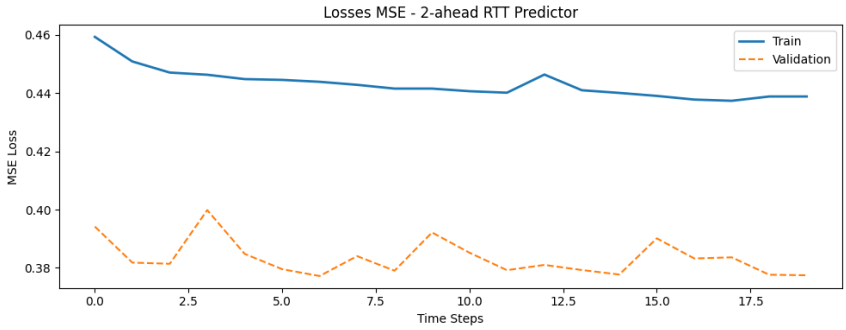
2 LSTM: 2-step forward

2.1 Hyperparameter settings:

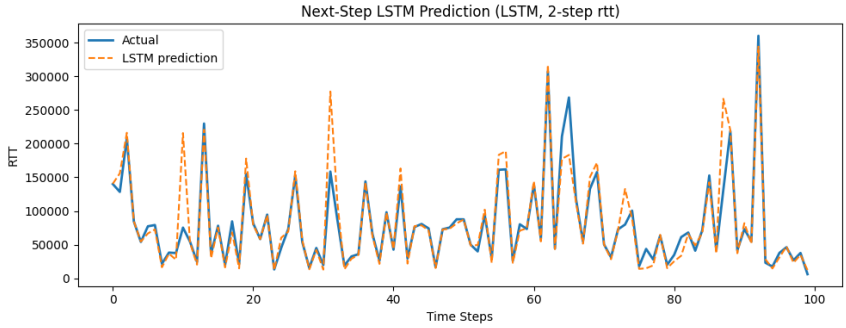
```
SEQ_LEN = 25       # length of input sequence (timesteps)
HIDDEN_DIM = 128
NUM_LAYERS = 5
BATCH_SIZE = 128
LR = 1e-3
EPOCHS = 20
DEVICE = torch.device("cuda" if torch.cuda.is_available() else "cpu")
SEED = 42
```

2.2 RTT

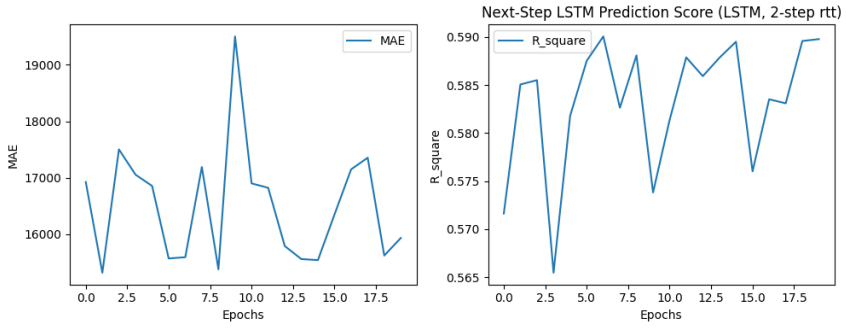
- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:

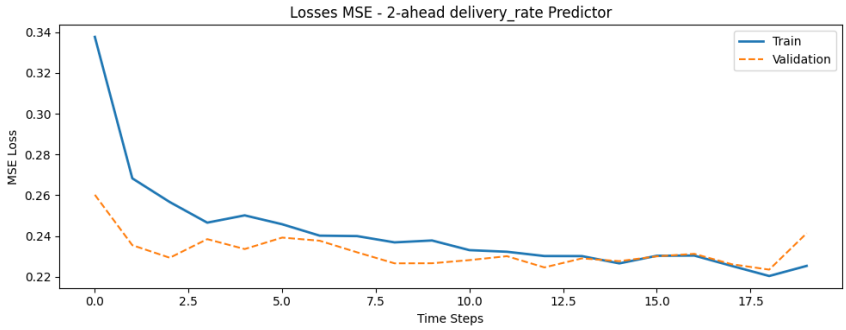


- **Prediction accuracy** on validation set over training epochs

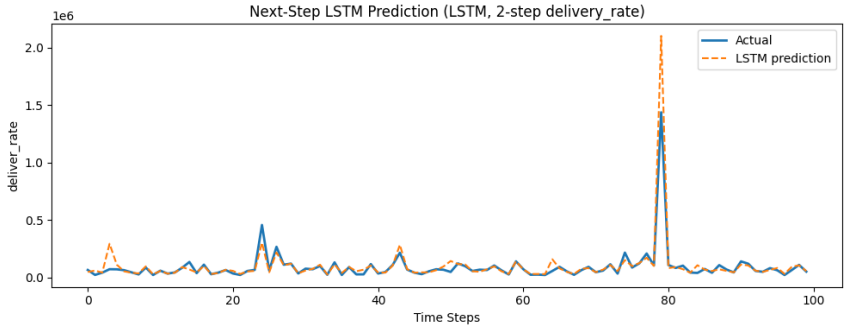


2.3 Delivery Rate

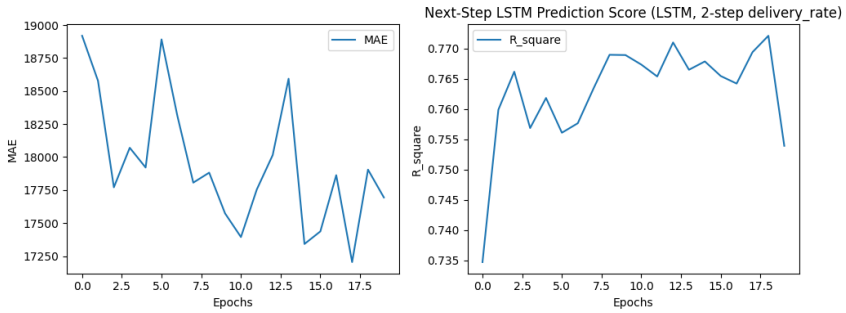
- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:



- **Prediction accuracy** on validation set over training epochs



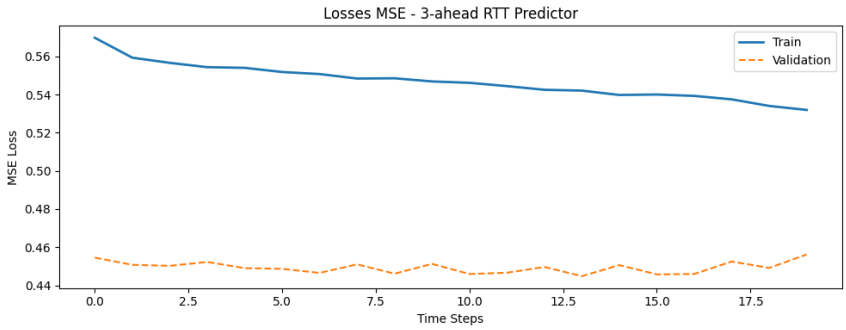
3 LSTM: 3-step forward

3.1 Hyperparameter settings:

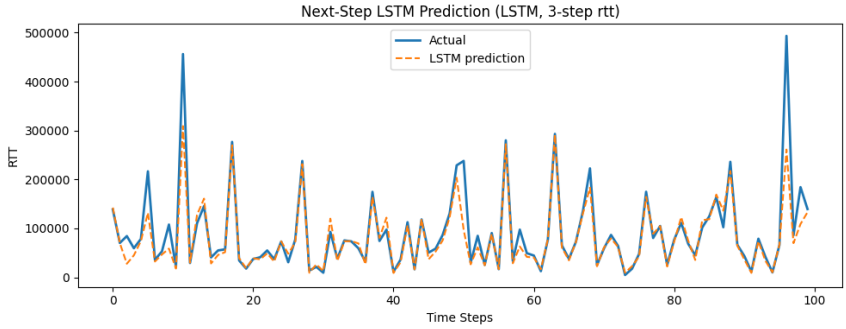
```
SEQ_LEN = 25        # length of input sequence (timesteps)
HIDDEN_DIM = 32
NUM_LAYERS = 5
BATCH_SIZE = 256
LR = 1e-3
EPOCHS = 20
DEVICE = torch.device("cuda" if torch.cuda.is_available() else "cpu")
SEED = 42
```

3.2 RTT

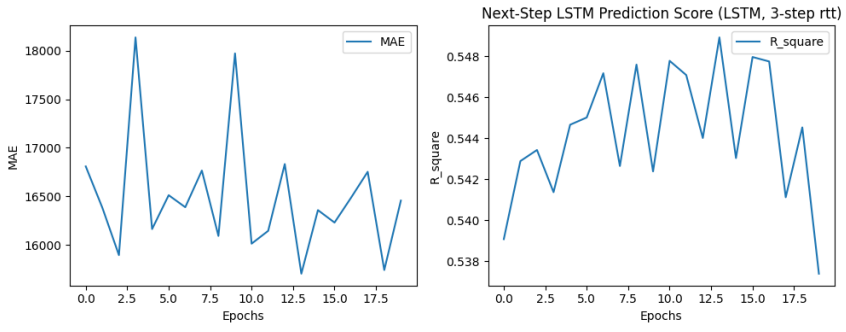
- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:

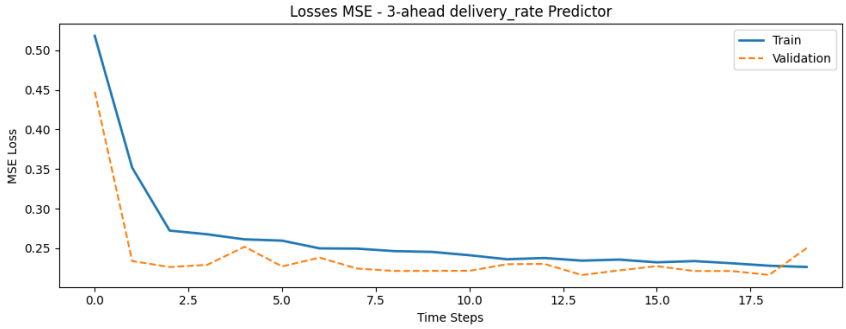


- **Prediction accuracy** on validation set over training epochs

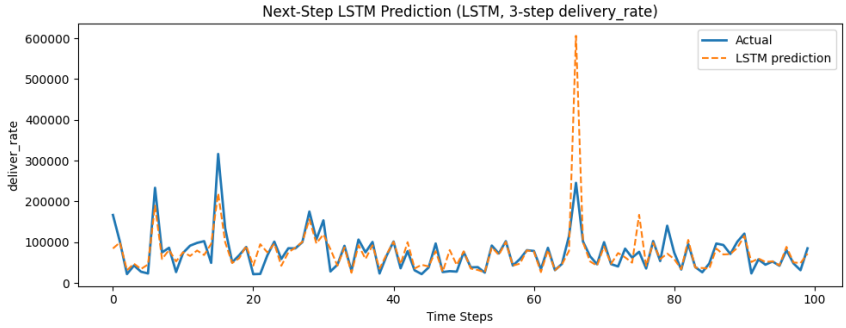


3.3 Delivery Rate

- **Training losses** on train / val set



- **RTT predictions** on 100 (non-consecutive) windows:



- **Prediction accuracy** on validation set over training epochs