

Aufgabe 11

Gruppe 4

Modell	# DNN-Parameter (Epoch_Ir_Train_Evaluation)	DNN-Accuracy(Test)	Test-WER
Baseline	<u>13 0.001 0.7004 0.6619</u> "lr": 0.001, "batch_size": 1, "epochs": 50, "window_size": 25e-3, "hop_size": 10e-3, "feature_type": "MFCC_D_DD", "n_filters": 40, "fbank_fmin": 0, "fbank_fmax": 8000, "num_ceps": 13, "left_context": 10, "right_context": 10,	0.6485967298113164	8.110344827586207
Best	<u>9 0.000001 0.8392 0.7920</u> <i>Siehe nächste Seite</i>	0.79522086562379	0.896551724137931

```

uebung10
C:\Users\yfdon\anaconda3\envs\ASE39\python.exe C:/Project/ase-gruppe-4/uebung10.py
Arguments:
sourcedatadir ./dataset/
datasdir ./dataset/
savedir ./trained/
Given posteriori OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
Model name: base13_0.001_0.7004_0.6619
Ev|Te: 0% | 0/1 [00:00:00, 0.00it/s]
DNN OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
-----
Ev|Te: 100% | 2195/2195 [00:31:00:00, 70.62it/s]
DNN Test Acc: 0.6485967298113164
WER calculation:: 0% | 1/2195 [00:00:07:14, 5.05it/s]-----
REF: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
N: 7 D: 0 I: 0 S: 0
current Total WER: 0.0
WER calculation:: 0% | 2/2195 [00:00:05:45, 6.35it/s]-----
REF: ['ONE', 'THREE', 'EIGHT', 'ONE', 'TWO', 'FOUR', 'SIX']
OUT: ['ONE', 'THREE', 'EIGHT', 'ONE', 'TWO', 'FOUR', 'SEVEN', 'SIX']
N: 7 D: 0 I: 1 S: 0
current Total WER: 7.142857142857143
WER calculation:: 0% | 3/2195 [00:00:05:13, 6.99it/s]-----
REF: ['FIVE', 'EIGHT', 'OH', 'SIX', 'SEVEN', 'THREE', 'SEVEN']
OUT: ['FIVE', 'EIGHT', 'OH', 'SIX', 'SEVEN', 'THREE', 'SEVEN']
N: 7 D: 0 I: 0 S: 0
current Total WER: 4.761904761904762
WER calculation:: 100% | 2195/2195 [03:14:00:00, 11.29it/s]
Total WER: 8.110344827586207

进程已结束,退出代码0

```

Baseline

```

uebung10
C:\Users\yfdon\anaconda3\envs\ASE39\python.exe C:/Project/ase-gruppe-4/uebung10.py
Arguments:
sourcedatadir ./dataset/
datasdir ./dataset/
savedir ./trained/
Given posteriori OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
Model name: best9_0.000001_0.8392_0.7920
Ev|Te: 0% | 0/1 [00:00:00, 0.00it/s]
possibly greatly increasing memory usage. To compact weights again call flatten_param
result = _VF.lstm(input, hx, self._flat_weights, self.bias, self.num_layers,
Ev|Te: 0% | 0/1 [00:03:00, 0.00it/s]
DNN OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
-----
Ev|Te: 100% | 2195/2195 [00:36:00:00, 60.84it/s]
DNN Test Acc: 0.79522086562379
WER calculation:: 0% | 1/2195 [00:00:07:17, 5.01it/s]-----
REF: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
OUT: ['SEVEN', 'OH', 'ONE', 'SEVEN', 'OH', 'FOUR', 'NINE']
N: 7 D: 0 I: 0 S: 0
current Total WER: 0.0
WER calculation:: 0% | 2/2195 [00:00:05:47, 6.30it/s]-----
REF: ['ONE', 'THREE', 'EIGHT', 'ONE', 'TWO', 'FOUR', 'SIX']
OUT: ['ONE', 'THREE', 'EIGHT', 'ONE', 'TWO', 'FOUR', 'SIX']
N: 7 D: 0 I: 0 S: 0
current Total WER: 0.0
WER calculation:: 0% | 3/2195 [00:00:05:12, 7.01it/s]-----
REF: ['FIVE', 'EIGHT', 'OH', 'SIX', 'SEVEN', 'THREE', 'SEVEN']
OUT: ['FIVE', 'EIGHT', 'OH', 'SIX', 'SEVEN', 'THREE', 'SEVEN']
N: 7 D: 0 I: 0 S: 0
current Total WER: 0.0
WER calculation:: 100% | 2195/2195 [03:15:00:00, 11.22it/s]
Total WER: 1.5724137931034483

进程已结束,退出代码0

```

Best

Best:

1. BLSTM Layer nach den FC-Layers
2. Learning Rate: ein StepLR scheduler wurde implementiert mit gamma=0.1 und step=4. bei 10 Epochen, also dass die learning rate bei 0.0001 startet und dann nach der 4. Epoche auf 0.00001 und nach der 8. auf 0.000001 sinkt.

Verwenden Sie [train2.py](#) und [model2.py](#), um dieses verbesserte Modell zu trainieren.

```
x = self.fc1(x)
x = self.relu(x)
x = self.fc2(x)
x = self.relu(x)
x = self.fc3(x)
x = self.relu(x)
# print(x.shape)

x, _ = self.blstm(x)
# print(x.shape)

x = self.fc4(x)
# batch_size, sequence_length = x.shape
# x = x.view(batch_size, sequence_length)
```