

CNN-model

*This model gives plots, after initial test with epochs = 10, epochs = 6 was determined as the optimal epochs size.

Vocab_size fit to data, maxlen = 100, num_filters = 128, embedding_dim = 100, kernel_size = 5.

Train Accuracy	Test Accuracy	Batch Size	Epochs
99.70	83.35	10	10*
98.29	82.79	16	6
99.75	83.47	16	6
99.71	82.46	100	6

Using maxlen and vocab size parameters fit to the data, num_filters = 128, embedding_dim = 100, kernel_size = 5; attempt2_CNN_modified

Train Accuracy	Test Accuracy	Batch Size	Epochs
99.87	87.76	16	6
99.90	87.33	16	10
99.93	86.94	32	9
99.75	86.98	16	9

Using GloVe embeddings

Train Accuracy	Test Accuracy	Batch Size	Epochs
99.87	87.76	16	6
99.90	87.33	16	10
99.93	86.94	32	9
99.75	86.98	16	9

CNN-model with hyper-parametrization

Parameters: 'vocab_size' = 5000, 'maxlen' = 100, 'embedding_dim' = 50.

Fitting 10 folds for 5 iterations for the grid search.

Train Accuracy	Test Accuracy	Batch Size	Epochs	num_filters	kernel_size
82.44	81.82	8	6	32	5
82.90	83.37	16	6	128	3
83.21	82.85	100	6	32	3

Using parameters fit to the data (maxlen = 2202 and vocab size = 192727 of data)- under attempt2_CNN_modified

Train Accuracy	Test Accuracy	Batch Size	Epochs	num_filters	kernel_size	num_folds: num_iters
86.64	86.39	16	6	64	7	4:4
86.90	86.39	16	9	32	5	4:5

Using GloVe embeddings

Using parameters fit to the data (maxlen = 2202 and vocab size = 192727 of data)- embedding dim = 100

Fitting 10 folds for 5 iterations for the grid search.

Train Accuracy	Test Accuracy	Batch Size	Epochs	num_filters	kernel_size	num_folds: num_iters
85.51	85.66	16	9	64	5	4:4
		32	15			10:5

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Stacked CNN-model

Using maxlen and vocab size parameters fit to the data, num_filters = 32, embedding_dim = 100, kernel_size is 4, 6, 8 in each channel respectively.

Train Accuracy	Test Accuracy	Batch Size	Epochs
99.7701	87.9620	16	4
99.8568	89.1150	100	4
99.9133	89.3862	32	6
99.9209	88.8098	100	6
99.6270	86.7752	16	6
99.8342	89.0132	32	6
99.9359	89.0471	64	9
99.9095	89.0471	32	5
99.9284	87.5890	32	20

Using GloVe embeddings

Train Accuracy	Test Accuracy	Batch Size	Epochs
56.6767	57.6128	16	6

With only one stack

Train Accuracy	Test Accuracy	Batch Size	Epochs
99.917108	88.232	32	6

Final

Multi-channel (3)- Epoch = 25

Train Accuracy: 99.950260
Test Accuracy: 87.996745
Test Precision: 88.213811
Test Recall: 83.369940
Test F1 score: 85.723504

Epoch = 2

Train Accuracy: 99.100196
Test Accuracy: 89.746374
Test Precision: 88.920909
Test Recall: 87.135237
Test F1 score: 88.019017

Multi-channel (3) GloVe- Epoch = 20 (16batch size)

Train Accuracy: 99.321777
Test Accuracy: 82.977283

Epoch = 30

Train Accuracy: 99.815375
Test Accuracy: 83.248562

Epoch = 50

Train Accuracy: 99.913341
Test Accuracy: 82.977283

Multi-channel (2)- Epoch = 2

Train Accuracy: 99.112719
Test Accuracy: 84.003258
Test Precision: 82.086677
Test Recall: 80.484734
Test F1 score: 81.277813

Epoch = 20

Train Accuracy: 99.859667
Test Accuracy: 81.409562
Test Precision: 80.153436
Test Recall: 75.637394
Test F1 score: 77.829960

Standard (no max)- Epoch = 6 (16 batch)

```
Train Accuracy: 76.075149
Test Accuracy: 73.995113
Test Precision: 76.024845
Test Recall: 57.881463
Test F1 score: 65.724002
```

Epoch = 4

```
Train Accuracy: 73.386145
Test Accuracy: 72.392720
Test Precision: 65.198826
Test Recall: 77.017654
Test F1 score: 70.617141
```

Standard (max 100)- Epoch = 6 (16 batch)

```
Train Accuracy: 75.943863
Test Accuracy: 73.669201
Test Precision: 76.676763
Test Recall: 55.863808
Test F1 score: 64.636148
```

Epoch = 20

```
Train Accuracy: 83.078319
Test Accuracy: 71.252036
Test Precision: 70.390414
Test Recall: 57.408575
Test F1 score: 63.240146
```

Epoch = 50

```
Train Accuracy: 85.233140
Test Accuracy: 71.618688
Test Precision: 71.299213
Test Recall: 57.093317
Test F1 score: 63.410364
```

Parameter Tuning (maxlen 100)- Epochs =6 (Batch 16) 4folds 4 iterations

```
Running data set
Best Accuracy : 0.8288
{'vocab_size': 192727, 'num_filters': 128, 'maxlen': 100, 'kernel_size': 7, 'embedding_dim': 100}
Test Accuracy : 0.8300
```

Test Precision: 82.989691
Test Recall: 76.134931
Test F1 score: 79.414666

Parameter Tuning (maxlen 100)- Epochs =6 (Batch 16) 4folds 4 iterations

Running data set
Best Accuracy : 0.8725
{'vocab_size': 192727, 'num_filters': 64, 'maxlen': 2202, 'kernel_size': 3, 'embedding_dim': 100}
Test Accuracy : 0.8725

Please use instead: "np.c

Test Precision: 87.006961
Test Recall: 82.755359
Test F1 score: 84.827921

Parameter Tuning (GloVe)- Epochs = 10 (16 Batch) 4cv/5iter

Running data set
Best Accuracy : 0.8678
{'vocab_size': 192727, 'num_filters': 128, 'maxlen': 2202, 'kernel_size': 3, 'embedding_dim': 100}
Test Accuracy : 0.8744

Please use instead: "np.c

Test Precision: 85.906040
Test Recall: 84.741488
Test F1 score: 85.319791

Standard (GloVe)- Epoch = 50 (16 batch)

Train Accuracy: 99.886829
Test Accuracy: 86.474741
Test Precision: 83.110164
Test Recall: 86.097100
Test F1 score: 84.577269