

Report

Undersampling method

All search terms

Dataset doesn't filtered by search term of tweets

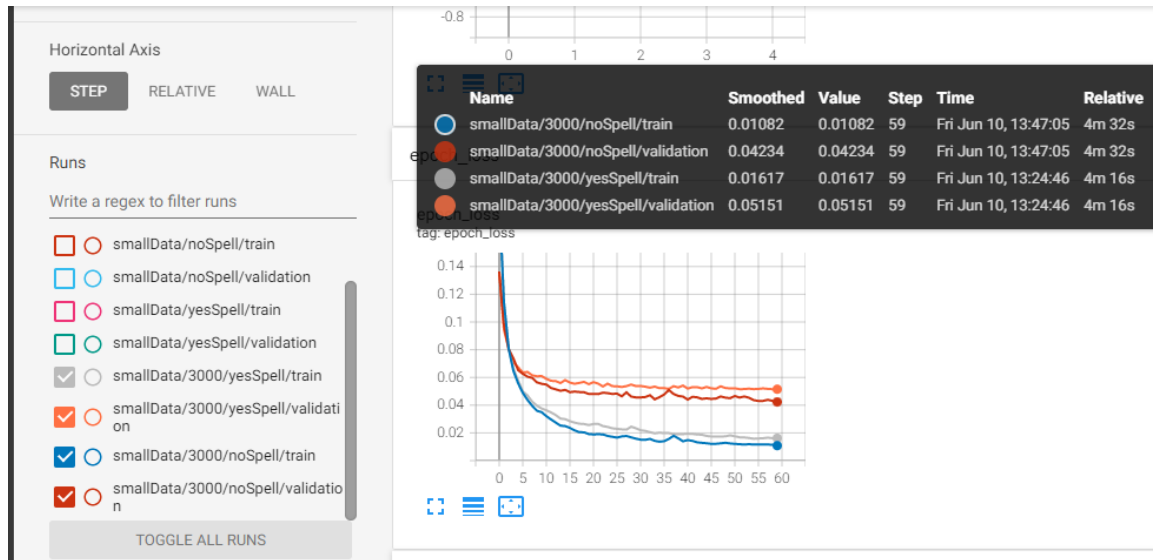
Scenario1 (1500)

- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **2 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:60



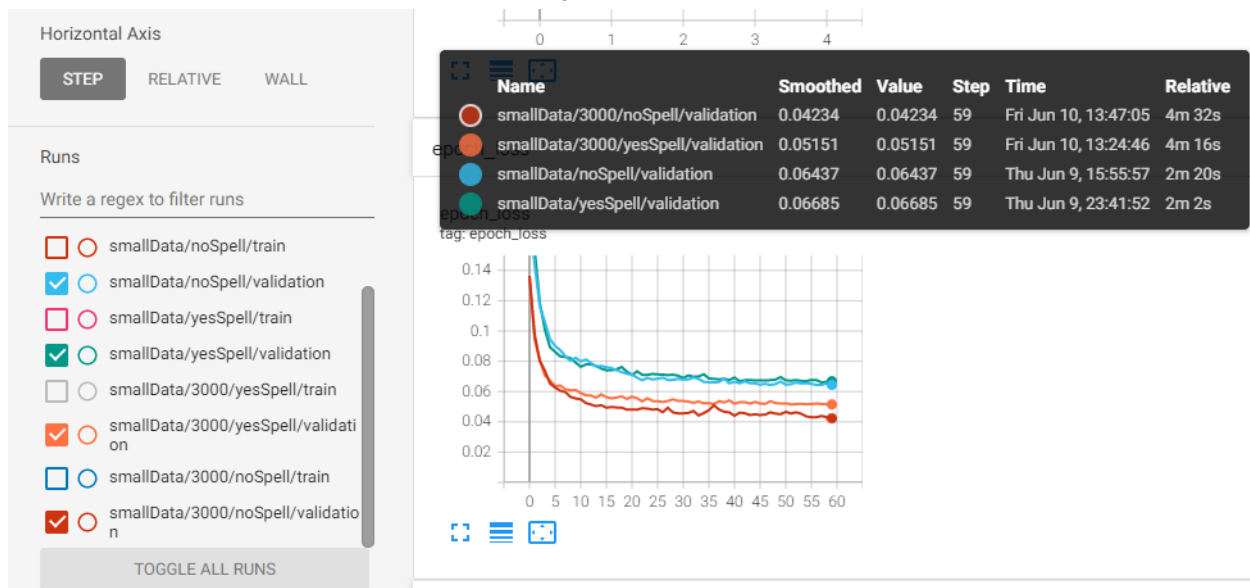
Scenario2 (3000)

- size=3000 (1000 neg, 1000 neu, 1000 pos)
- Model: **2 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:60



Compare validations

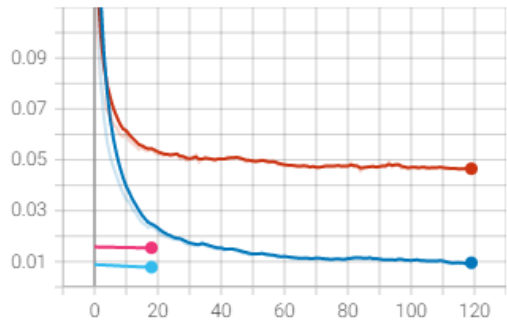
Compare validation loss of two scenario in yesSpell and noSpell modes



Compare best with full data

- Full dataset means 820K samples. But it's better because data is imbalanced.

epoch_loss
tag: epoch_loss



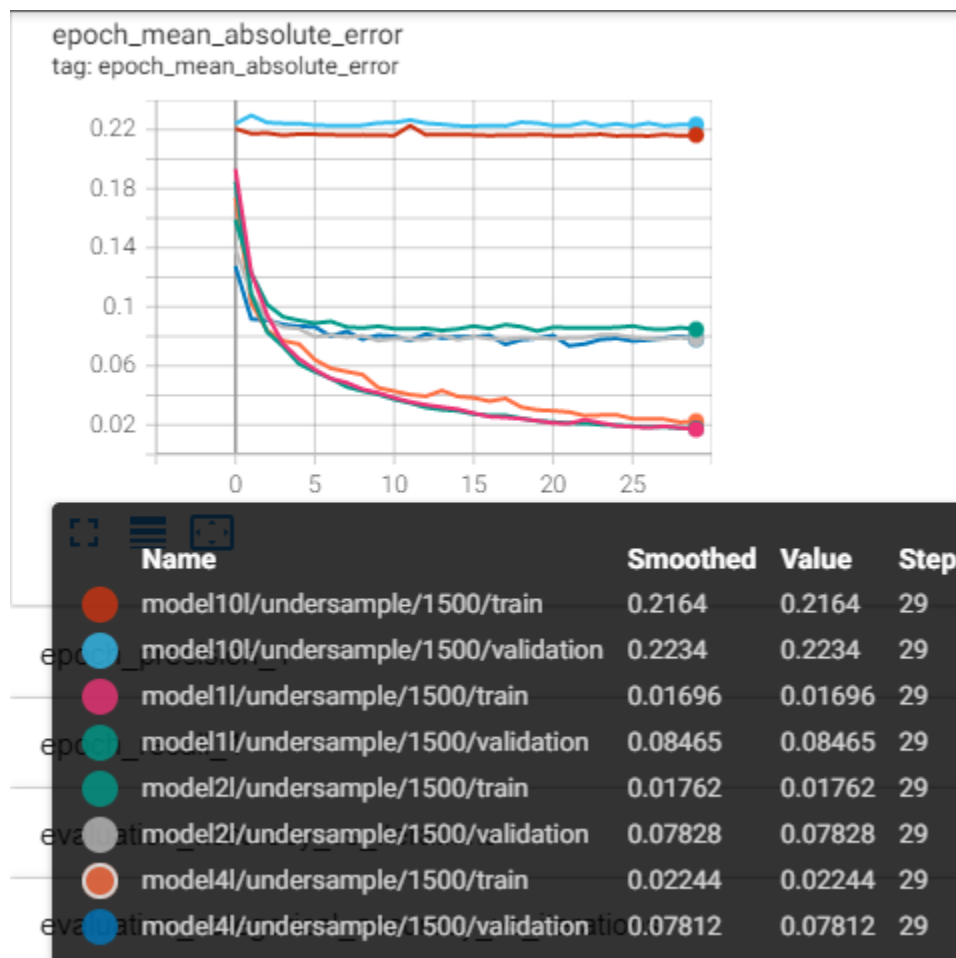
FullData/800K/noSpell/train
FullData/800K/noSpell/validation
smallData/3000/noSpell/train
smallData/3000/noSpell/validation

Name	Smoothed	Value	Step	Time	Relative
FullData/800K/noSpell/train	7.797e-3	7.7458e-3	18	Mon Jun 13, 16:52:36	48m 37s
FullData/800K/noSpell/validation	0.01543	0.01546	18	Mon Jun 13, 16:52:36	48m 37s
smallData/3000/noSpell/train	9.5237e-3	9.7551e-3	119	Fri Jun 10, 14:42:02	8m 43s
smallData/3000/noSpell/validation	0.04651	0.04641	119	Fri Jun 10, 14:42:02	8m 43s

epoch mean squared error

Just *bitcoin* search term

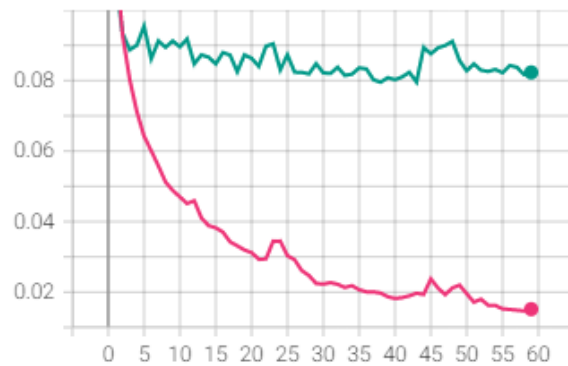
Compare multiple layers of bi-lstm



3L_regression_1500data

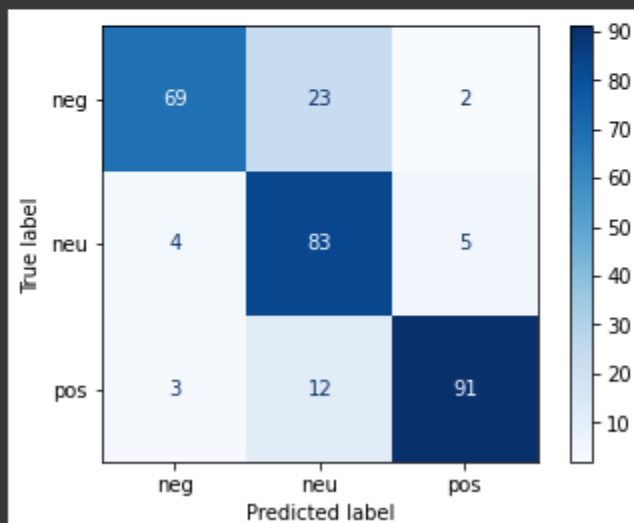
- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:60

epoch_loss
tag: epoch_loss



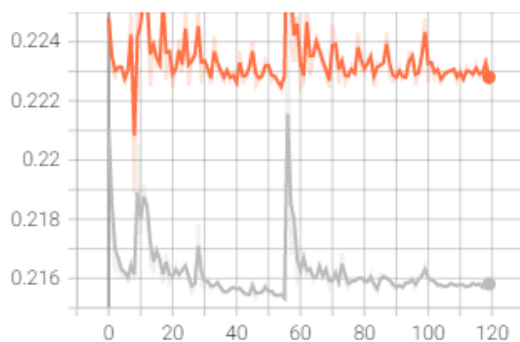
	Name	Smoothed	Value	Step
●	model4l/1500/noSpell/train	0.01516	0.0152	59
●	model4l/1500/noSpell/validation	0.08231	0.08236	59

	precision	recall	f1-score	support
neg	0.91	0.73	0.81	94
neu	0.70	0.90	0.79	92
pos	0.93	0.86	0.89	106
accuracy			0.83	292
macro avg	0.85	0.83	0.83	292
weighted avg	0.85	0.83	0.83	292



- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **10 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:120

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

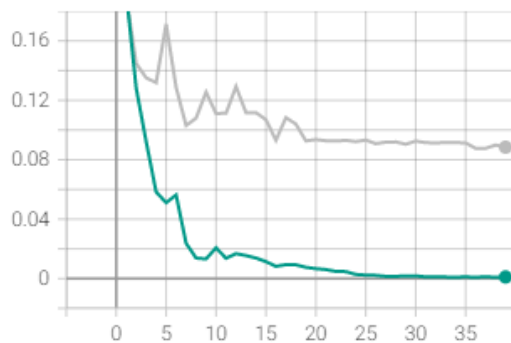


	Name	Smoothed	Value	Step
●	model10l/1500/noSpell/train	0.2158	0.2159	119
●	model10l/1500/noSpell/validation	0.2228	0.2225	119

3L_oneHot_1500data

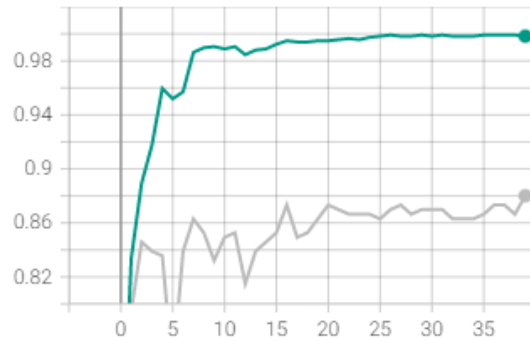
- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:categorical_crossentropy, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



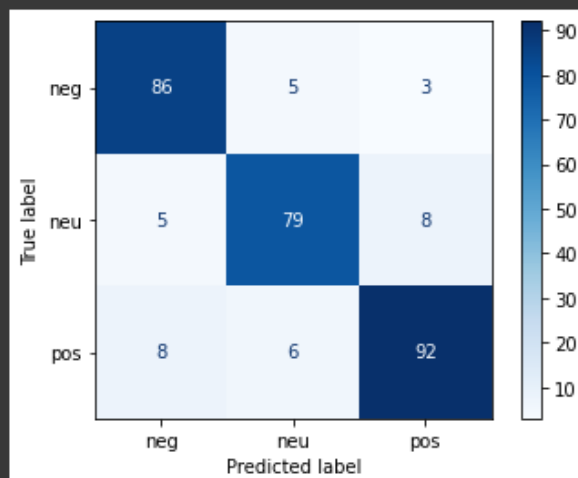
	Name	Smoothed
●	one-hot/model4l/undersample/1500/noSpell/train	1.1213e-3
●	one-hot/model4l/undersample/1500/noSpell/validation	0.08846

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
●	one-hot/model4l/undersample/1500/noSpell/train	0.9983
●	one-hot/model4l/undersample/1500/noSpell/validation	0.8801

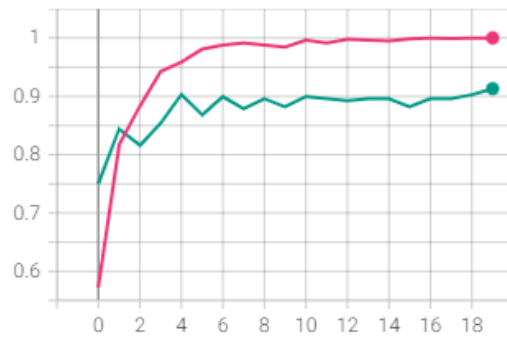
	precision	recall	f1-score	support
neg	0.87	0.91	0.89	94
neu	0.88	0.86	0.87	92
pos	0.89	0.87	0.88	106
accuracy			0.88	292
macro avg	0.88	0.88	0.88	292
weighted avg	0.88	0.88	0.88	292



BERT_oneHot_1500data

- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **bert_en_uncased_L-12_H-768_A-12+batchNorm+dropout+3dense**, optimizer:Adam, loss:categorical_crossentropy, epochs:30

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



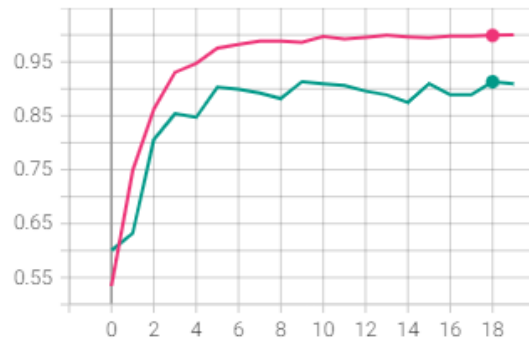
	Name	Smoothed
epoch_loss	bert/base/one-hot/undersample/1600/noSpell/train	1
	bert/base/one-hot/undersample/1600/noSpell/validation	0.9132

	precision	recall	f1-score	support
neg	0.87	0.93	0.90	94
neu	0.95	0.93	0.94	89
pos	0.92	0.89	0.90	105
accuracy			0.91	288
macro avg	0.91	0.91	0.91	288
weighted avg	0.91	0.91	0.91	288

True label \ Predicted label	neg	neu	pos
neg	87	1	6
neu	4	83	2
pos	9	3	93

- size=1500 (500 neg, 500 neu, 500 pos)
- Model:
bert_en_uncased_L-12_H-768_A-12+batchNorm+dropout+128dense+3dense,
optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
epoch_categorical_accuracy	bert/base/one-hot/undersample/1600/noSpell/train	0.9991
epoch_categorical_accuracy	bert/base/one-hot/undersample/1600/noSpell/validation	0.9132

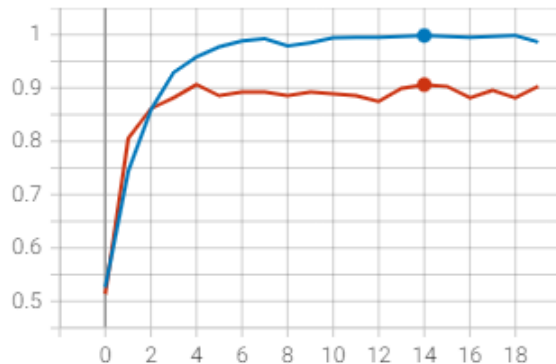
	precision	recall	f1-score	support
neg	0.89	0.90	0.89	94
neu	0.96	0.91	0.94	89
pos	0.89	0.91	0.90	105
accuracy			0.91	288
macro avg	0.91	0.91	0.91	288
weighted avg	0.91	0.91	0.91	288

True label \ Predicted label	neg	neu	pos
neg	85	1	8
neu	4	81	4
pos	7	2	96

FinBert_oneHot_1500data

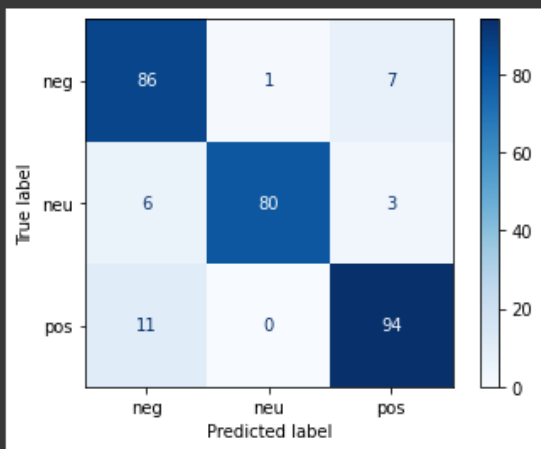
- size=1500 (500 neg, 500 neu, 500 pos)
- Model: **ProsusAI/finbert** : transformers bert+dropout+128dense+3dense, optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
●	finbert/one-hot/undersample/1600/train	0.9983
●	finbert/one-hot/undersample/1600/validation	0.9063

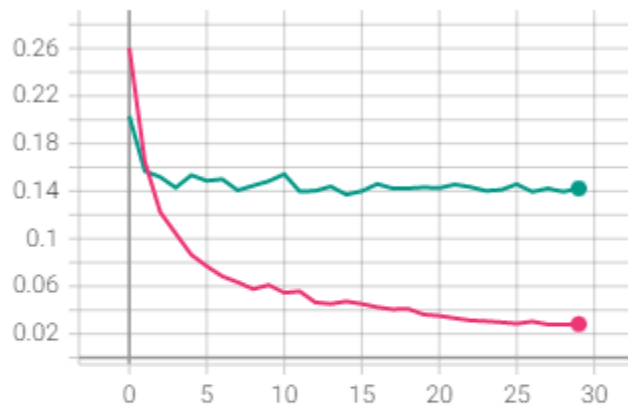
	precision	recall	f1-score	support
neg	0.83	0.91	0.87	94
neu	0.99	0.90	0.94	89
pos	0.90	0.90	0.90	105
accuracy			0.90	288
macro avg	0.91	0.90	0.90	288
weighted avg	0.91	0.90	0.90	288





4lstm_Regression(-1,1)_1500data

epoch_mean_absolute_error

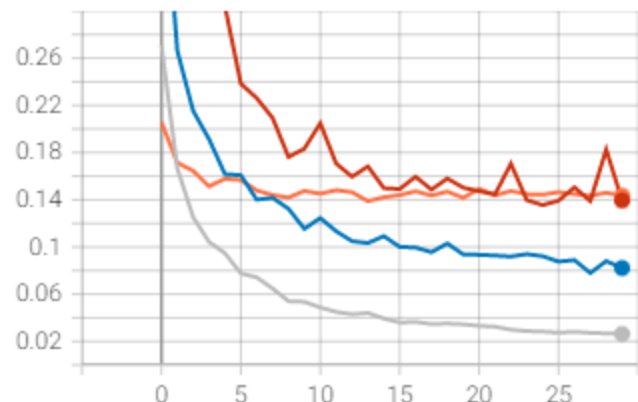
tag: epoch_mean_absolute_error



Name		Smoothed
	regression/model4l/undersample/1500/train	0.02818
	regression/model4l/undersample/1500/validation	0.1423

Bert+batch+1dense

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

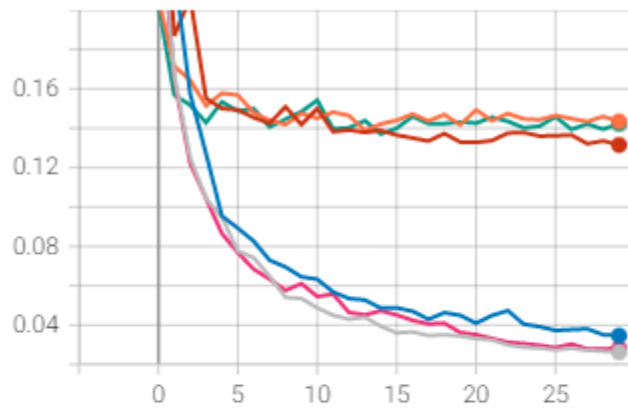


	Name	Smoothed
bert/base/regression/undersample/1500/train	bert/base/regression/undersample/1500/train	0.08217
bert/base/regression/undersample/1500/validation	bert/base/regression/undersample/1500/validation	0.1394
regression/model2l/undersample/1500/train	regression/model2l/undersample/1500/train	0.02621
regression/model2l/undersample/1500/validation	regression/model2l/undersample/1500/validation	0.1434

Evaluation accuracy vs iterations

Bert_regression(-1,1)(Bert+1dense)

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



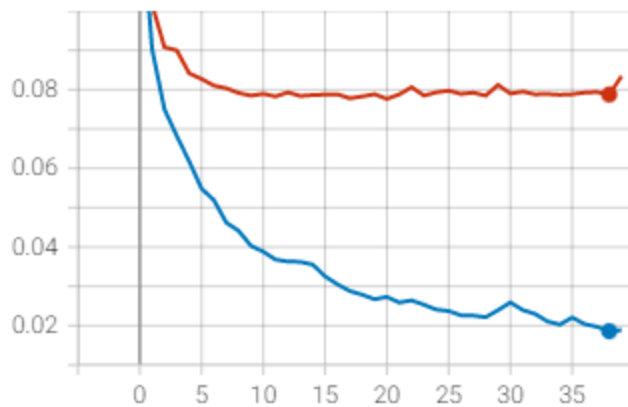
Name	Smoothed
bert/base/regression/undersample/1500/train	0.03463
bert/base/regression/undersample/1500/validation	0.1315
regression/model2l/undersample/1500/train	0.02621
regression/model2l/undersample/1500/validation	0.1434
regression/model4l/undersample/1500/train	0.02818
regression/model4l/undersample/1500/validation	0.1423

Change label value method

3L_regression_11K data

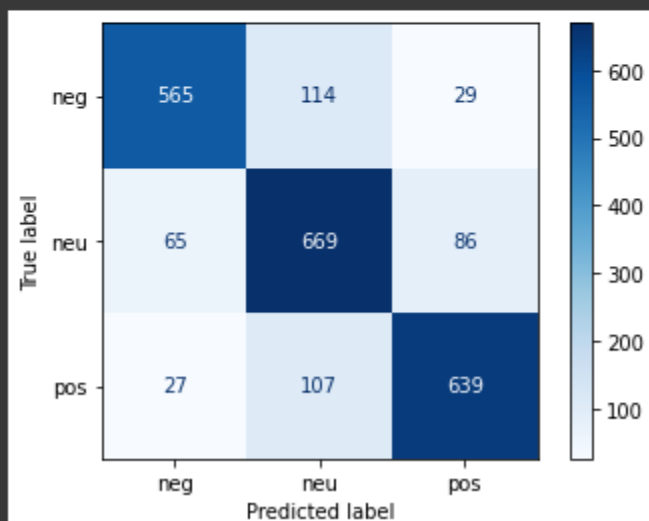
- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



	Name	Smoothed	Value	Step
●	model4l/chl/11k/noSpell/train	0.01861	0.01861	38
●	model4l/chl/11k/noSpell/validation	0.07875	0.07875	38

	precision	recall	f1-score	support
neg	0.86	0.80	0.83	708
neu	0.75	0.82	0.78	820
pos	0.85	0.83	0.84	773
accuracy			0.81	2301
macro avg	0.82	0.81	0.82	2301
weighted avg	0.82	0.81	0.81	2301



- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **10 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

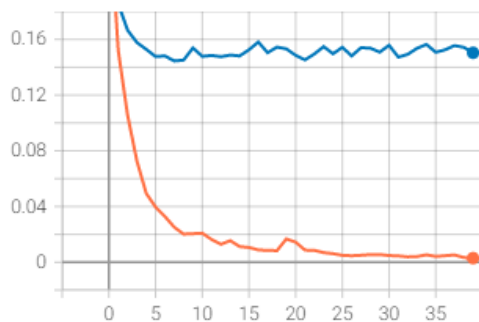


	Name	Smoothed	Value	Step
●	model10l/chl/11K/noSpell/train	0.2196	0.2196	39
●	model10l/chl/11K/noSpell/validation	0.2242	0.2242	39

3L_oneHot_11K data

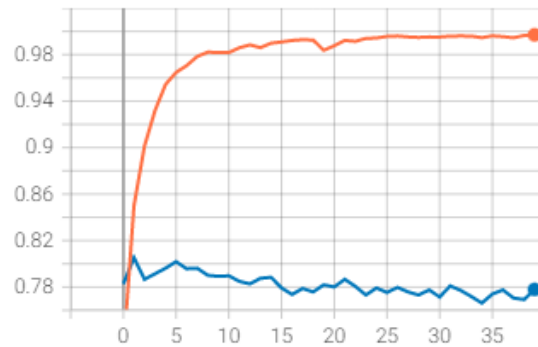
- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:categorical_crossentropy, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



	Name	Smoothed
●	one-hot/model4l/chl/11K/noSpell/train	2.9587e-3
●	one-hot/model4l/chl/11K/noSpell/validation	0.1504

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
●	one-hot/model4l/chl/11K/noSpell/train	0.997
●	one-hot/model4l/chl/11K/noSpell/validation	0.7779

	precision	recall	f1-score	support
neg	0.83	0.78	0.81	708
neu	0.74	0.74	0.74	820
pos	0.77	0.82	0.80	773
accuracy			0.78	2301
macro avg	0.78	0.78	0.78	2301
weighted avg	0.78	0.78	0.78	2301

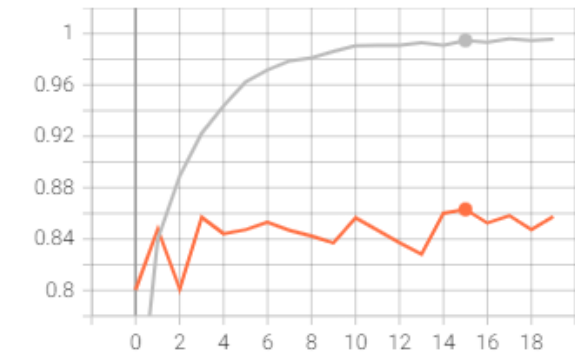
True label \ Predicted label	neg	neu	pos
neg	554	112	42
neu	74	603	143
pos	39	101	633

BERT_oneHot_11K data

- size=11K (3500 neg, 4000neu, 4000pos)

- Model:
bert_en_uncased_L-12_H-768_A-12+batchNorm+dropout+128dense+3dense,
 optimizer:Adam, loss:categorical_crossentropy, epochs:20

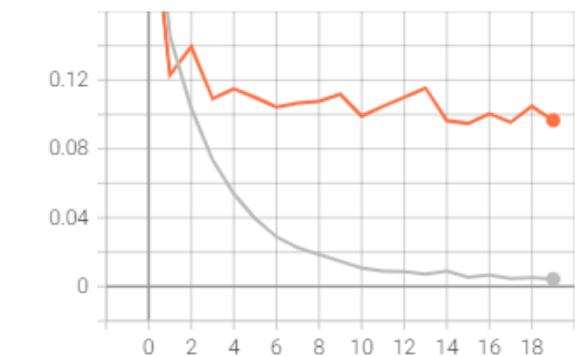
epoch_categorical_accuracy
tag: epoch_categorical_accuracy



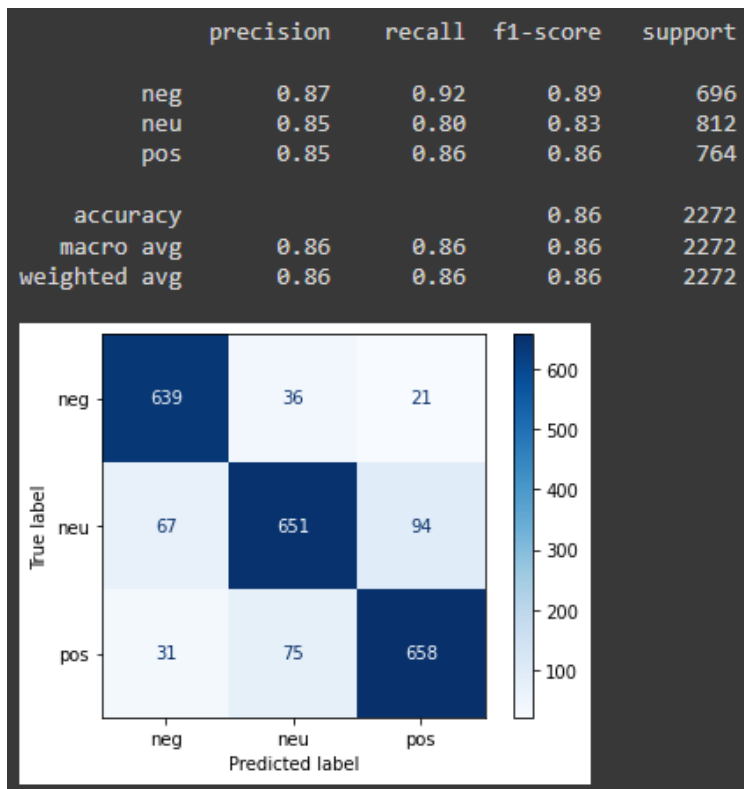
Name	Smoothed
bert/base/one-hot/chl/11K/noSpell/train	0.9947
bert/base/one-hot/chl/11K/noSpell/validation	0.8631

epoch_mean_absolute_error

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



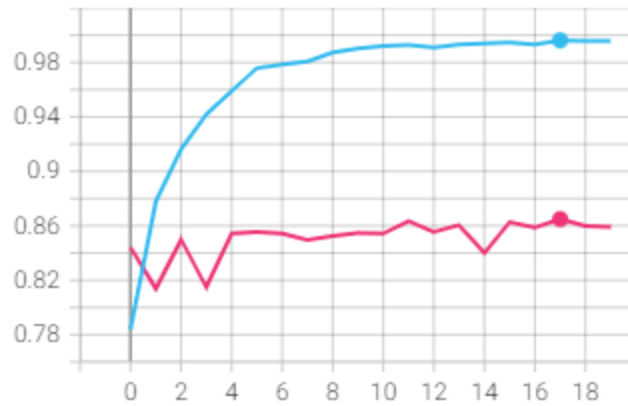
Name	Smoothed
bert/base/one-hot/chl/11K/noSpell/train	4.3783e-3
bert/base/one-hot/chl/11K/noSpell/validation	0.09661



FinBert_oneHot_11K data

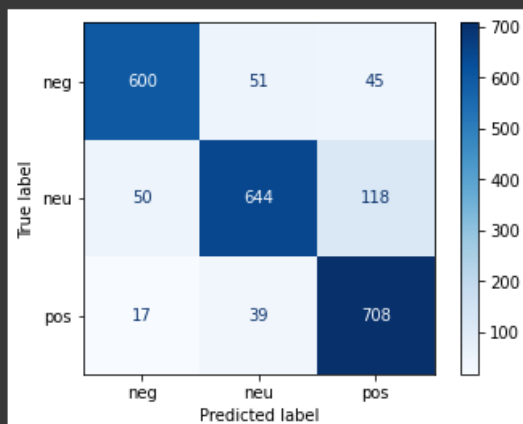
- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **ProsusAI/finbert : transformers bert+dropout+128dense+3dense**, optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



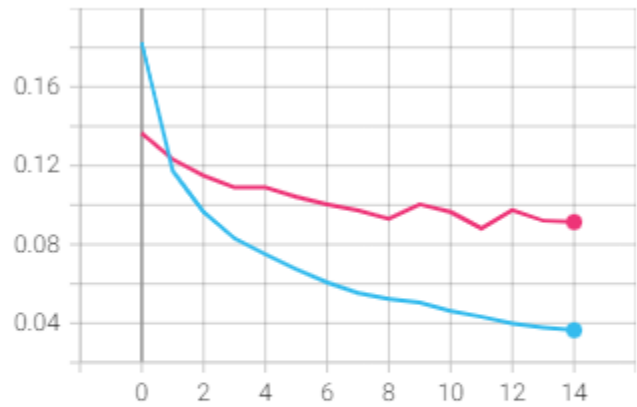
Name	Smoothed
finbert/one-hot/chl/11K/train	0.9963
finbert/one-hot/chl/11K/validation	0.8649




	precision	recall	f1-score	support
neg	0.90	0.86	0.88	696
neu	0.88	0.79	0.83	812
pos	0.81	0.93	0.87	764
accuracy			0.86	2272
macro avg	0.86	0.86	0.86	2272
weighted avg	0.86	0.86	0.86	2272





bert_regression(-1,1)

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

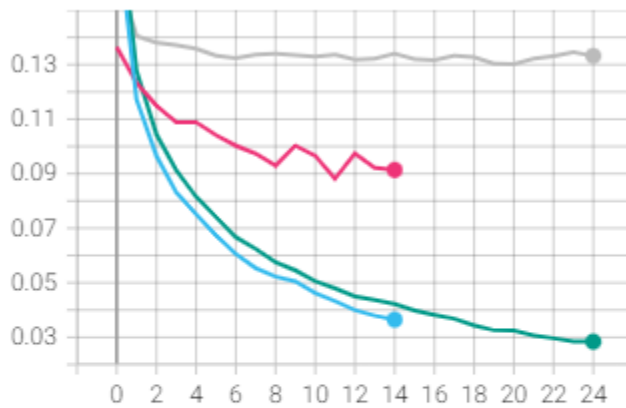




Name	Smoothed
 bert/base/regression/chl/11K/train	0.03647
 bert/base/regression/chl/11K/validation	0.09137

4lstm_regression(-1,1)

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



Name	Smoothed
bert/base/regression/chl/11K/train	0.03647
bert/base/regression/chl/11K/validation	0.09137
regression/model4l/chl/11K/train	0.02837
regression/model4l/chl/11K/validation	0.1332

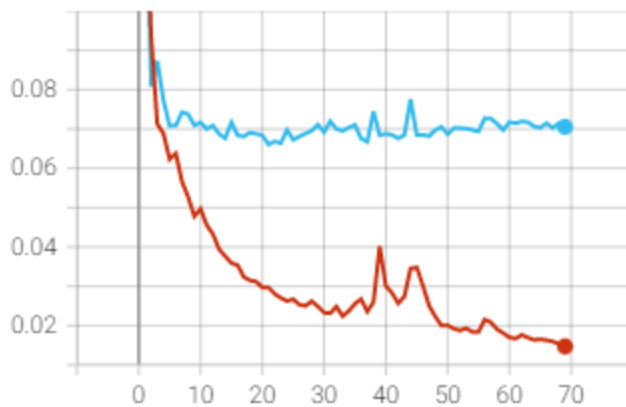
removal of neutral data

Main dataset (1600)

3L_regression

- size=1600 (500 neg, 1000pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:70

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

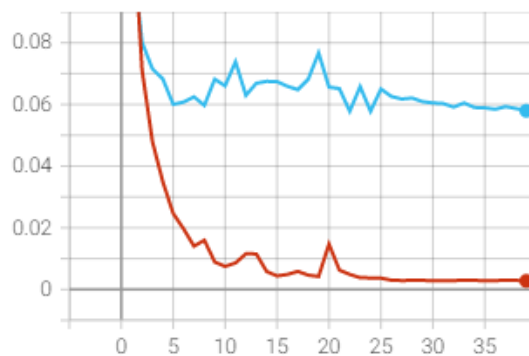


	Name	Smoothed	Value	Step
●	model4l/no_neu/1600/noSpell/train	0.01471	0.01471	69
●	model4l/no_neu/1600/noSpell/validation	0.07053	0.07053	69

3L_oneHot

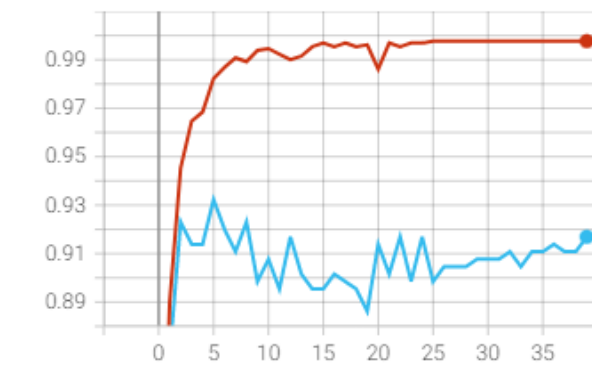
- size=1600 (500 neg, 1000pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:categorical_crossentropy, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error



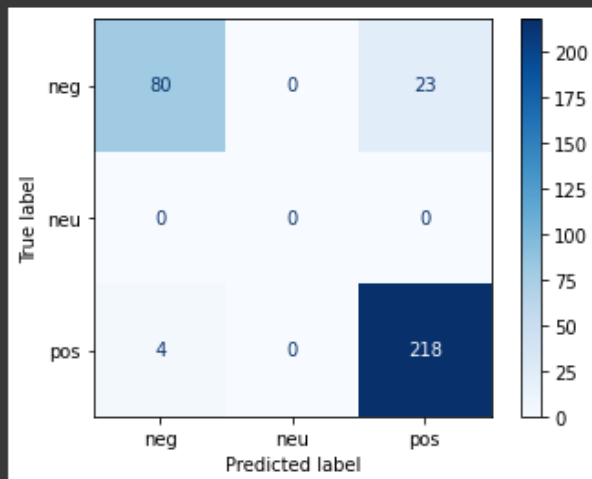
	Name	Smoothed
●	one-hot/model4l/no_neu/1600/noSpell/train	2.7914e-3
●	one-hot/model4l/no_neu/1600/noSpell/validation	0.05793

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
●	one-hot/model4l/no_neu/1600/noSpell/train	0.9977
●	one-hot/model4l/no_neu/1600/noSpell/validation	0.9169

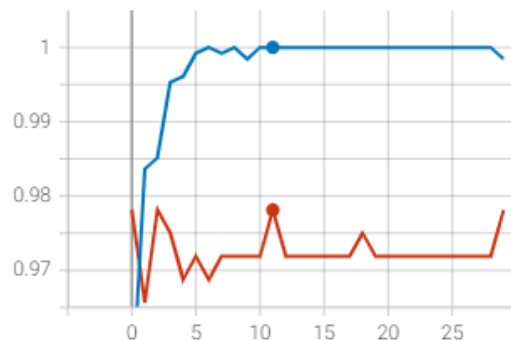
	precision	recall	f1-score	support
neg	0.95	0.78	0.86	103
neu	0.00	0.00	0.00	0
pos	0.90	0.98	0.94	222
micro avg	0.92	0.92	0.92	325
macro avg	0.62	0.59	0.60	325
weighted avg	0.92	0.92	0.91	325



BERT_oneHot

- size=1600 (500 neg, 1000pos)
- Model:
bert_en_uncased_L-12_H-768_A-12+batchNorm+dropout+128dense+3dense,
optimizer:Adam, loss:categorical_crossentropy, epochs:30

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
●	bert/base/one-hot/no_neu/1600/noSpell/train	1
●	bert/base/one-hot/no_neu/1600/noSpell/validation	0.9781

	precision	recall	f1-score	support
neg	0.95	0.98	0.97	102
neu	0.00	0.00	0.00	0
pos	0.99	0.98	0.98	218
micro avg	0.98	0.98	0.98	320
macro avg	0.65	0.65	0.65	320
weighted avg	0.98	0.98	0.98	320

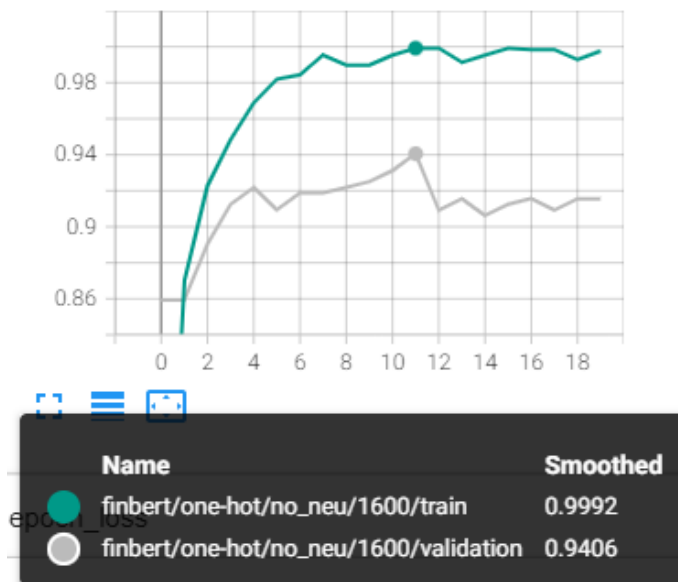
True label \ Predicted label	neg	neu	pos
neg	100	0	2
neu	0	0	0
pos	5	0	213

FinBert_oneHot

- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **ProsusAI/finbert** : **transformers bert+dropout+128dense+3dense**, optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy

tag: epoch_categorical_accuracy



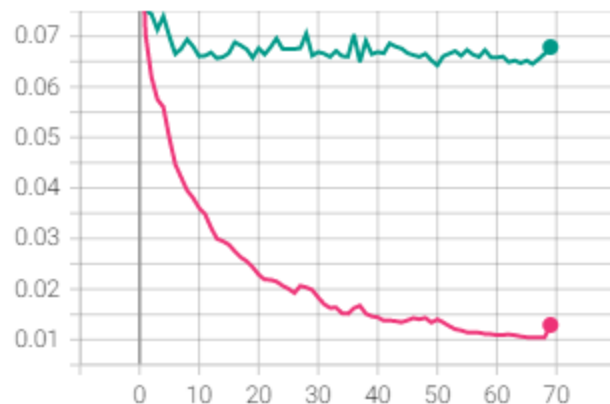
Change label dataset (7500)

3L_regression

- size=7500 (3500 neg, 4000 pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:MAE, epochs:70

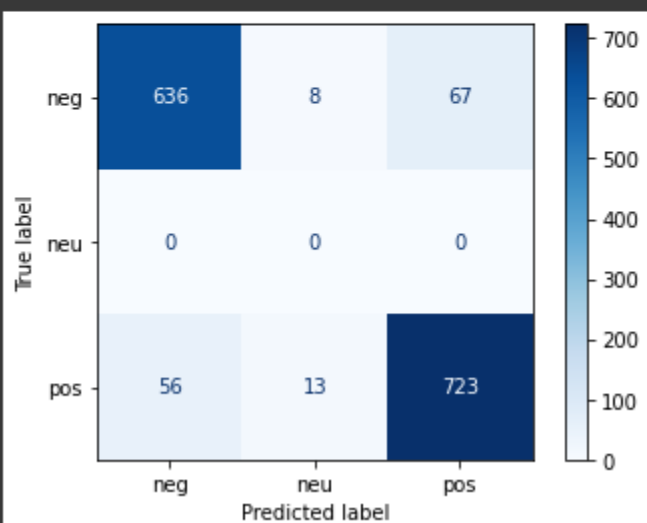
epoch_mean_absolute_error

tag: epoch_mean_absolute_error



	Name	Smoothed	Value	Step
Validation loss vs iterations	model4l/no_neu/7500/noSpell/train	0.01291	0.01291	69
	model4l/no_neu/7500/noSpell/validation	0.06787	0.06787	69

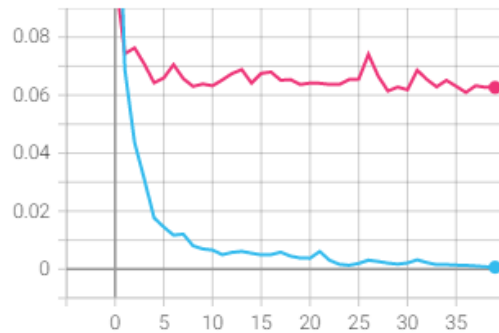
	precision	recall	f1-score	support
neg	0.92	0.89	0.91	711
neu	0.00	0.00	0.00	0
pos	0.92	0.91	0.91	792
accuracy			0.90	1503
macro avg	0.61	0.60	0.61	1503
weighted avg	0.92	0.90	0.91	1503



3L_oneHot

- size=7500 (3500 neg, 4000 pos)
- Model: **4 layer BiLSTM**, optimizer:Adam, loss:categorical_crossentropy, epochs:40

epoch_mean_absolute_error
tag: epoch_mean_absolute_error

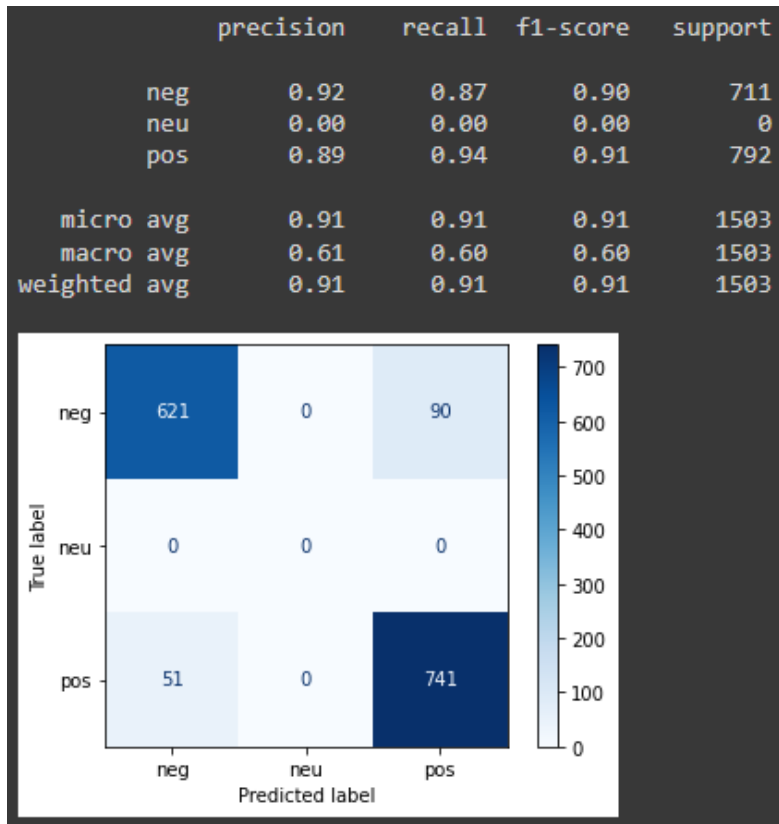


Name	Smoothed
one-hot/model4l/no_neu/7500/noSpell/train	6.592e-4
one-hot/model4l/no_neu/7500/noSpell/validation	0.06266

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



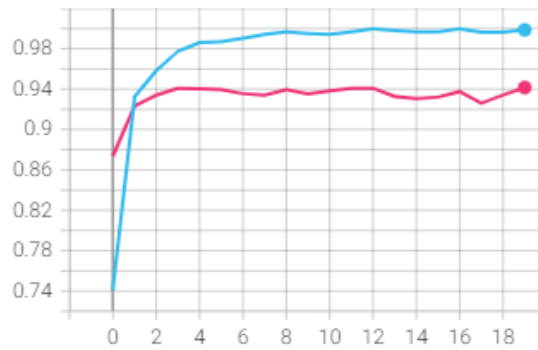
Name	Smoothed
one-hot/model4l/no_neu/7500/noSpell/train	0.9993
one-hot/model4l/no_neu/7500/noSpell/validation	0.9062



BERT_oneHot

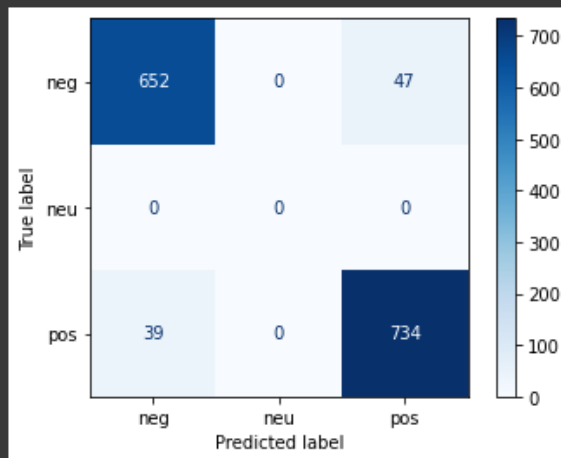
- size=7500 (3500 neg, 4000 pos)
- Model:
bert_en_uncased_L-12_H-768_A-12+batchNorm+dropout+128dense+3dense,
 optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



Name	Smoothed
bert/base/one-hot/no_neu/7500/noSpell/train	0.9987
bert/base/one-hot/no_neu/7500/noSpell/validation	0.9416

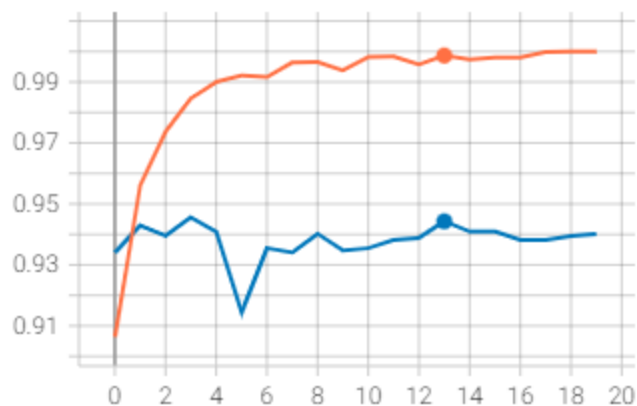
	precision	recall	f1-score	support
neg	0.94	0.93	0.94	699
neu	0.00	0.00	0.00	0
pos	0.94	0.95	0.94	773
micro avg	0.94	0.94	0.94	1472
macro avg	0.63	0.63	0.63	1472
weighted avg	0.94	0.94	0.94	1472



FinBert_oneHot

- size=11K (3500 neg, 4000neu, 4000pos)
- Model: **ProsusAI/finbert : transformers bert+dropout+128dense+3dense**, optimizer:Adam, loss:categorical_crossentropy, epochs:20

epoch_categorical_accuracy
tag: epoch_categorical_accuracy



	Name	Smoothed
epoch_loss	finbert/one-hot/no_neu/7500/train	0.9987
	finbert/one-hot/no_neu/7500/validation	0.9443

	precision	recall	f1-score	support
neg	0.94	0.94	0.94	699
neu	0.00	0.00	0.00	0
pos	0.94	0.94	0.94	773
micro avg	0.94	0.94	0.94	1472
macro avg	0.63	0.63	0.63	1472
weighted avg	0.94	0.94	0.94	1472

