

# Assignment 4

2025 딥러닝

박재욱 / 융합소프트웨어학부

# Robustly optimized BERT

- RoBERTa : mainly just train BERT for longer and remove next sentence prediction!
- twitter 기반 모델 - 구어체, 이모지, 해시태그 잘 처리

The screenshot shows the Hugging Face interface for the model 'cardiffnlp/twitter-roberta-base-sentiment-latest'. The header includes the Hugging Face logo, a search bar, and navigation links for Models, Datasets, Spaces, Docs, and Pricing. The model card itself features a title bar with the model name, a 'like' button (685), a 'Follow' button, and the user 'Cardiff NLP' (162). Below the title bar are tags for 'Text Classification', 'Transformers', 'PyTorch', 'TensorFlow', 'tweet\_eval', 'English', 'roberta', and 'arxiv:2202.03829'. A navigation bar at the bottom of the card includes 'Model card', 'Files', 'xet', 'Community' (40), and buttons for 'Train', 'Deploy', and 'Use this model'. The main content area on the left describes the model as 'Twitter-roBERTa-base for Sentiment Analysis - UPDATED (2022)' and provides details about its training on ~124M tweets and finetuning for sentiment analysis with the TweetEval benchmark. On the right, a 'Downloads last month' section shows a line graph and the number '3,399,528'. Below that, an 'Inference Providers' section indicates that the model is not yet deployed by any provider and offers a button to 'Ask for provider support'.

**cardiffnlp/twitter-roberta-base-sentiment-latest** like 685 Follow Cardiff NLP 162

Text Classification Transformers PyTorch TensorFlow tweet\_eval English roberta arxiv:2202.03829

Model card Files xet Community 40 Train Deploy Use this model

Edit model card

### Twitter-roBERTa-base for Sentiment Analysis - UPDATED (2022)

This is a RoBERTa-base model trained on ~124M tweets from January 2018 to December 2021, and finetuned for sentiment analysis with the TweetEval benchmark. The original Twitter-based RoBERTa model can be found [here](#) and the original reference paper is [TweetEval](#). This model is suitable for English.

Downloads last month  
**3,399,528**

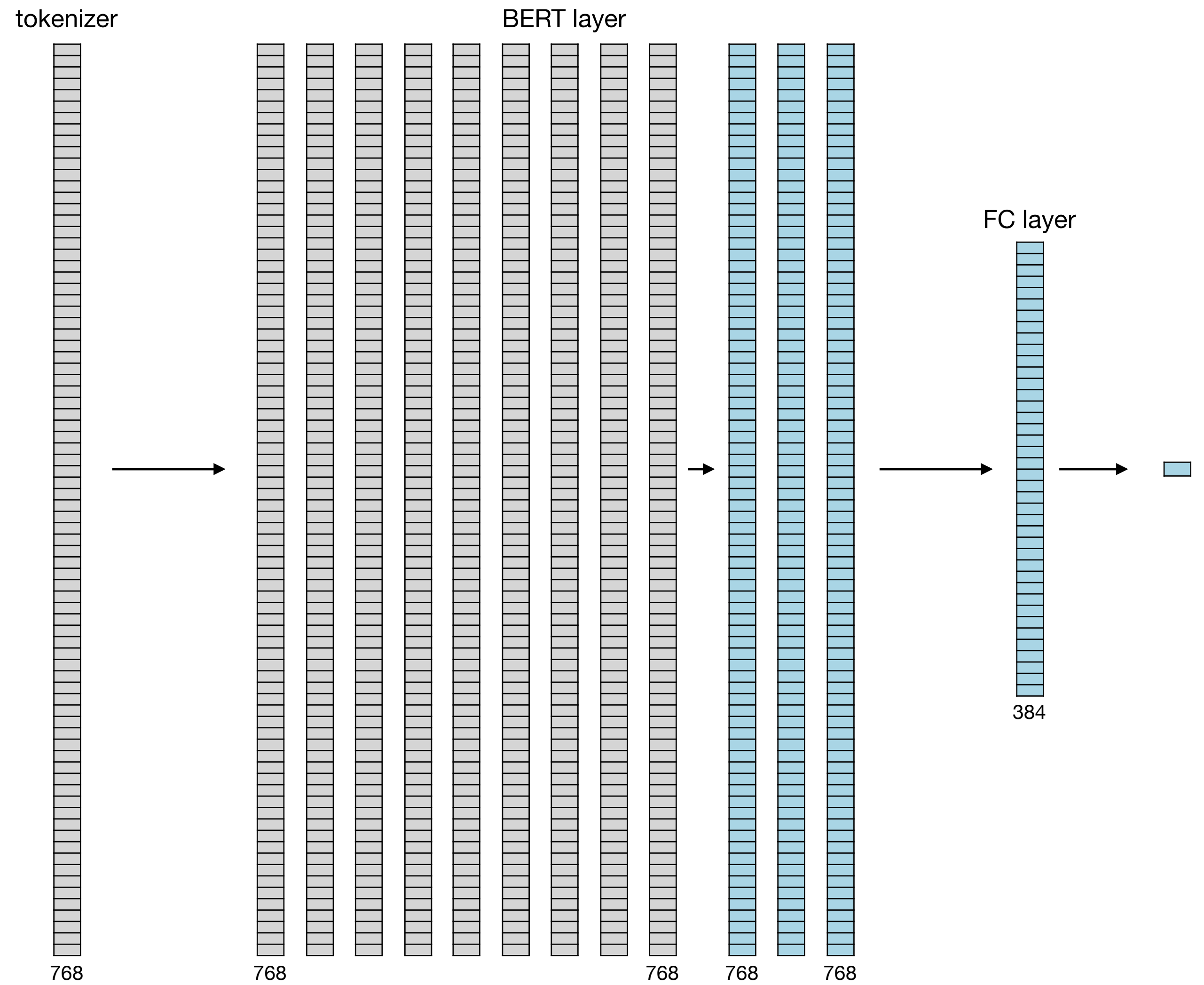
⚡ Inference Providers **NEW**

🔗 Text Classification

This model isn't deployed by any Inference Provider. 🐶 5 Ask for provider support

# 모델 설명

- twitter-roberta 토크나이저 사용
- 입력 토큰 최대 길이 512
- batch\_size 64
- twitter-roberta 9개 layer freeze, 3개 layer만 학습
- GradScaler + autocast = 16bit floating point
- Learning rate  
RoBERTa layer =  $2e-5$   
FC layer =  $1e-4$
- weight\_decay=0.01
- 최고 기록 갱신할 때마다 weight 저장



# 학습 결과

- 최고 기록을 갱신할 때마다 모델의 weight 저장
- test\_acc 4번 연속 오르지 않으면 종료하고 best weight 로드

```
Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.12, train_acc=0.957]
Epoch 6 summary - avg loss: 0.1197, Train acc: 0.9572, Test acc: 0.9437

Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.104, train_acc=0.963]
Epoch 7 summary - avg loss: 0.1044, Train acc: 0.9631, Test acc: 0.9373

Training: 100%|██████████| 391/391 [02:30<00:00, 2.61it/s, loss=0.0937, train_acc=0.967]
Epoch 8 summary - avg loss: 0.0937, Train acc: 0.9668, Test acc: 0.9444

Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.083, train_acc=0.97]
Epoch 9 summary - avg loss: 0.0830, Train acc: 0.9698, Test acc: 0.9431

Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.0681, train_acc=0.976]
Epoch 10 summary - avg loss: 0.0681, Train acc: 0.9756, Test acc: 0.9420

Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.06, train_acc=0.979]
Epoch 11 summary - avg loss: 0.0600, Train acc: 0.9790, Test acc: 0.9413

Training: 100%|██████████| 391/391 [02:30<00:00, 2.60it/s, loss=0.0528, train_acc=0.982]
Epoch 12 summary - avg loss: 0.0528, Train acc: 0.9817, Test acc: 0.9398

Early stopping.

Best test acc: 0.9444
Applying optimal model weights.
```