Fine-Tuning RoBerta – Performance Comparison with Weights Freezing

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GitHub: https://github.com/Nagharjun17/RoBERTa-Finetune

The RoBERTa model was proposed in RoBERTa: A Robustly Optimized BERT Pretraining Approach by Yinhan Liu, Myle Ott, Naman Goyal, Jingfei Du, Mandar Joshi, Danqi Chen, Omer Levy, Mike Lewis, Luke Zettlemoyer, Veselin Stoyanov. It is based on Google's BERT model released in 2018.

It builds on BERT and modifies key hyperparameters, removing the next-sentence pretraining objective and training with much larger mini-batches and learning rates.

Dataset:
AG News Dataset

Performance and Results:

Training	Fully Fine-tuned RoBerta	Frozen RoBerta
Training Loss	0.2136	1.3952
Training Accuracy	92.68	24.15
Training Precision	93.02	29.11
Training Recall	93.14	51.23
Training F1 Score	90.08	15.9

Testing	Fully Fine-tuned RoBerta	Frozen RoBerta
Testing Loss	0.1674	1.392
Testing Accuracy	94.56	24.13
Testing Precision	95.21	35.11
Testing Recall	95.52	71.14
Testing F1 Score	92.2	13.44