# **IJARSCT**



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 4, Issue 2, January 2024

# LEBERT :Lite and Efficiently Optimized BERT PRetraining Approach

### Priyanka Yadav and Anjali Sharma

Institute of Distance and Open Learning, Mumbai, Maharashtra, India

**Abstract:** The extensive generalization of these models can lead to overfitting, causing the model to perform poorly on unseen data and thereby not realizing its full potential. To address this challenge systematically, we propose a novel approach for lightweight and efficient fine-tuning of BERT (**Bidirectional Encoder Representations from Transformers**) that aims to achieve improved generalization and harness the maximum capabilities of BERT. Our proposed approach incorporates various regularization techniques designed to adaptively manage the model's complexity. We plan to conduct experiments using this approach across various NLP tasks, including GLUE (Wang et al., 2019), RACE (Lai et al., 2017), and SQuAD (Rajpurkar et al., 2016).

#### **Keywords: BERT**

## REFERENCES

- [1] Colin Raffel, Noam Shazeer, Adam Roberts, Katherine Lee, Sharan Narang, Michael Maten, Yanqi Zhou, Wei Li, Peter J. Liu. Exploring the Limits of Transfer Learning with a Unified Text-to-Text Transformer.2020
- [2] Tom B. Brown, Benjamin Mann, Nick Ryder, Melanie Subbiah, Jared Kaplan, Prafulla Dhariwal, Arvind Neelakantan, Pranav Shyam, Girish Sastry, Amanda Askell, Sandhini Agarwal, Ariel Herbert-Voss Gretchen Krueger, Tom Henighan Rewon Child Aditya Ramesh Daniel M. Ziegler Jeffrey Wu Clemens Winter Christopher Hesse Mark Chen Eric Sigler Mateusz Litwin Scott Gray Benjamin Chess Jack Clark Christopher Berner, Sam McCandlish, Alec Radford, Ilya Sutskever, Dario Amodei. Language Models are Few-Shot Learners.2020
- [3] Jacob Devlin, Ming-Wei Chang, Kenton Lee, Kristina Toutanova. BERT: Pre-schooling of Deep Bidirectional Transformers for Language Understanding.2019
- [4] Alex Wang, Amanpreet Singh, Julian Michael, Felix Hill, Omer Levy & Samuel R. Bowman. GLUE: A MULTITASK BENCHMARK AND ANALYSIS PLATFORM FOR NATURAL LANGUAGE UNDERSTANDING. 2019.
- [5] Guokun Lai, Qizhe Xie, Hanxiao Liu, Yiming Yang and Eduard Hovy. RACE: Large-scale Reading Comprehension Dataset from Examinations.2017
- [6] Pranav Rajpurkar, Jian Zhang, Konstantin Lopyrev and Percy Liang. SQuAD: a hundred,000+ Questions for Machine Comprehension of Text.2016
- [7] Dr. Michael J. Garbade. A Simple Introduction to Natural Language Processing.2018
- [8] J. Deng, W. Dong, R. Socher, L. Li, Kai Li and Li Fei-Fei, "ImageNet: A massive-scale hierarchical photo database," 2009 IEEE Conference on Computer Vision and Pattern Recognition, Miami, FL, USA, 2009, pp. 248-255, doi: 10.1109/CVPR.2009.5206848.
- [9] Ashish Vaswani, Noam Shazee, Niki Parmar, Jakob Uszkoreit, Llion Jones, Aidan N. Gomez, Łukasz Kaiser, Illia Polosukhin. Attention Is All You Need. 2017
- [10] Alex Sherstinsky. Fundamentals of Recurrent Neural Network (RNN) and Long Short-Term Memory (LSTM) Network. 2021
- [11] Haoming Jiang, Pengcheng He, Weizhu Chen, Xiaodong Liu, Jianfeng Gao, Tuo Zhao. SMART: Robust and Efficient Fine-Tuning for Pre-educated Natural Language Models via Principled Regularized Optimization. 2021
- [12] Prateek Joshi, July 21, 2020. Transfer Learning for NLP: Fine-Tuning BERT for Text Classification.
- [13] Yinhan Liu, Myle Ott, Naman Goyal, Jingfei Du, Mandar Joshi, Danqi Che, Omer Levy, Mike Lewis, Luke Zettlemoyer, Veselin Stoyanov. RoBERTa: A Robustly Optimized BERT Pretraining Approach 2019

DOI: 10.48175/IJARSCT-15219

ISSN 2581-9429 IJARSCT

# **IJARSCT**



## International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Impact Factor: 7.53 Volume 4, Issue 2, January 2024

[14] Zhenzhong Lan, Mingda Chen, Sebastian Goodman, Kevin Gimpel, Piyush Sharma, Radu Soricut. ALBERT: A LITE BERT FOR SELF-SUPERVISED LEARNING OF LANGUAGE REPRESENTATIONS. 2020

DOI: 10.48175/IJARSCT-15219

