

Neural Machine Translation with FastMoS

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1 Introduction

In recent years, machine translation make great progress especially in neural machine translation [8, 5, 2, 6, 7, 1, 3]. In [4], they use a fast mos to obtain great performance on some machine translation corpora. In this project, we investigate this method to improve the performance of other machine translation corpora.

2 Results

Architecture	MT02	MT03	MT04	MT05	MT08	Speed(ms/batch)
Transformer	46.45	45.12	45.84	45.52	35.50	17.1
Transformer + FastMoS (3)	47.92	46.55	47.12	47.01	36.90	30.7

Table 1: Performance w/o FastMos on Zh-En corpus

References

- [1] Dzmitry Bahdanau, Kyunghyun Cho, and Yoshua Bengio. Neural machine translation by jointly learning to align and translate. In *ICLR*, 2015.
- [2] Jonas Gehring, Michael Auli, David Grangier, Denis Yarats, and Yann N Dauphin. Convolutional sequence to sequence learning. In *ICML*, 2017.
- [3] Xiang Kong, Zhaopeng Tu, Shuming Shi, Eduard Hovy, and Tong Zhang. Neural machine translation with adequacy-oriented learning. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 33, pages 6618–6625, 2019.
- [4] Xiang Kong, Qizhe Xie, Zihang Dai, and Eduard Hovy. Fast and simple mixture of softmaxes with bpe and hybrid-lightrnn for language generation. In *Proceedings of the AAAI Conference on Artificial Intelligence*, volume 33, pages 6626–6633, 2019.

- [5] Minh-Thang Luong, Hieu Pham, and Christopher D Manning. Effective approaches to attention-based neural machine translation. In *EMNLP*, 2015.
- [6] Ilya Sutskever, Oriol Vinyals, and Quoc V Le. Sequence to sequence learning with neural networks. In *NIPS*, 2014.
- [7] Zhaopeng Tu, Zhengdong Lu, Yang Liu, Xiaohua Liu, and Hang Li. Modeling coverage for neural machine translation. In *ACL*, 2016.
- [8] Yonghui Wu, Mike Schuster, Zhifeng Che, and Quoc V. et al. Le. Google’s neural machine translation system: Bridging the gap between human and machine translation. *arXiv*, 2016.