
Cross-lingual transferability of PLMs

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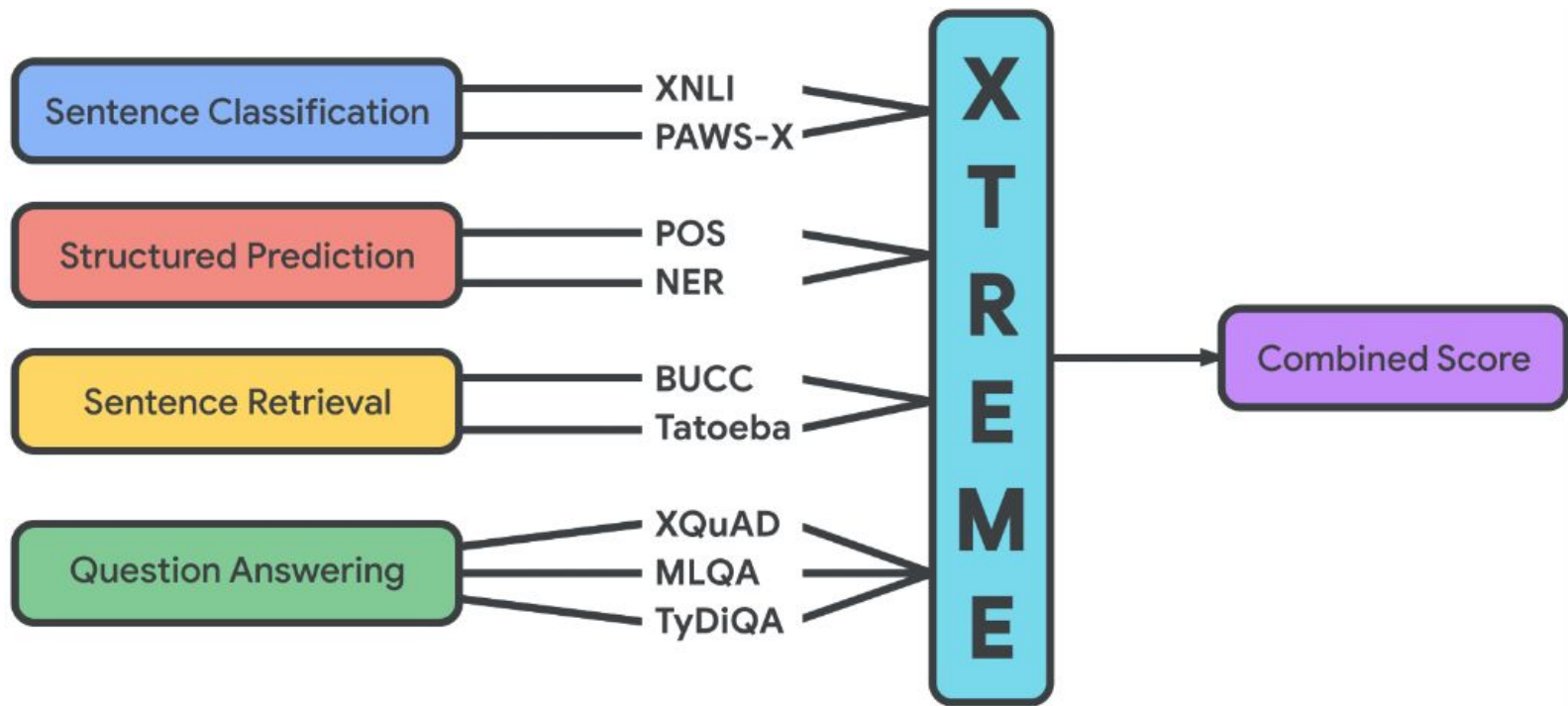
PLMs' zero shot cross lingual transferability

- For a PLM pretrained on multilingual data, we can do zero shot transfer learning with it
- E.g. for a downstream task, we train the model on English only and inference on the dev/test set of other languages
- Although trained on only one language, it can generalize on other languages

Models that can do zero-shot transfer

- Mbert
- PLMs pretrained with cross-lingual loss (e.g. TLM, DWA etc.)
 - XLM-R
 - [Info-XLM](#)
 - [Awesome-align](#)
- [Adding regularization loss to the finetuning process](#)

XTREME



Cross-lingual transferability: Do changing word order affects the result?

- If we have both the English training data and its {french, german, chinese...} translation
- What if we reorder the sentences of the English training data according to the word order of its {french, german, chinese...} translation

Reorder

Word aligner

24 歳 ? もう 働い てる の じゃあ ? 学生 です 。
24 歳 ? 已經 在 工作 了 嗎 ? 我 還是 學生 。



Reorder

24 歳 ? 已經 工作 在 了 嗎 ? 我 學生 還是 。

What you should do in this homework

- Finetune 3 different PLM (including mbert) on the udpos task of XTREME
 - You should train one baseline model with the original english data
 - You should train with English data reordered with {French, German, Hindi, Chinese}
 - You should reorder data with unfinetuned/finetuned aligners
 - When training finetuned aligners, you can finetune the aligners separately (4 models) or together (1 model)
 - Report the score on dev of all languages and compare them
- Perform the same process on XNLI or PAWS-X
- (OPTIONAL) Perform the same process on a QA task

其他做 zero-shot cross-lingual transfer 的 paper

- [On the Cross-lingual Transferability of Monolingual Representations](#)
- [Zero-shot Reading Comprehension by Cross-lingual Transfer Learning with Multi-lingual Language Representation Model](#)
- [INFOXLM: An Information-Theoretic Framework for Cross-Lingual Language Model Pre-Training](#)

Links

- [XTREME tutorial](#)
- [Word-aligner tutorial](#)
- [What's word alignment?](#)
- [作業講解連結](#)