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1. Exercise for "Multilingual Natural Language Processing"

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1 Paper Readings

The PEFT literature is vast and grows rapidly. The papers listed below serve as an initial starting point for your reading to complete the homework.

- Towards A Unified View of Parameter-Efficient Transfer Learning
- MAD-X: An Adapter-Based Framework For Multi-Task Cross-Lingual Transfer
- LoRA: Low-Rank Adaption of Large Language Models
- Prefix-Tuning: Optimizing Continuous Prompts for Generation

2 Parameter-Efficient Fine-Tuning: Basics

1. Describe the core idea of parameter-efficient fine-tuning (PEFT) briefly.

2. Concisely explain the key advantages of PEFT!

3. Can you think of and explain potential disadvantages oft PEFT?

3 Comparison of methods

Analyse and compare (i) LoRA, (ii) Prefix-Tuning, and (iii) Adapters along the following dimensions:

- Modelling: how are the original language model representations updated during PEFT between the approaches?

- Implementation, ease of use

- Inference