

Coreference Resolution for Polish: Improvements within the CRAC 2022 Shared Task

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Motivations and goals

New resources

- Dataset CorefUD 1.0
- Evaluation CorefUD scorer

Evaluation of the Polish language

- build a new tool for Polish
- compare new architecture with the previous solution (2018)

Architecture

- Corneferencer (Niton et al. , 2018)
 - mention clustering system
 - mentions must be detected first
 - requires the generation of mention-pairs representations
- Submitted System
 - start-to-end architecture (Kirstain et al., 2021)
 - pre-trained transformer model (HerBERT base/large)
 - end-to-end features based on PCC

Shared Task Results

- not the best result (76.67 F1)
- straka-single-multilingual-model (78.32 F1, 2.15%)

Processing speed

| System | Time [s] |
|---------------------|----------|
| herbert-large (GPU) | 0.0542 |
| herbert-large (CPU) | 0.1845 |
| Corneferencer | 271.7 |

CoNLL F1 Results (Corneferencer test set)

| System | F1 |
|---------------|-------|
| hebert-base | 72.44 |
| herbert-large | 73.39 |
| Corneferencer | 82.44 |

Summary

- Significantly faster processing speed
- Yet there were better optimized (multilingual) solutions within the shared task

Further Work

- Longformer evaluation
- Evaluation of Corneferencer with a mention detection tool

Thank you for your
attention

- Coreference Resolution for Polish: Improvements within the CRAC 2022 Shared Task, Karol Saputa