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OPEN FLOOR. DISCUSSION ABOUT TEXT MINING, MACHINE LEARNING, A DATABASE WITH 28 LANGUAGES

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1440 Collective bargaining agreements (CBAs) texts from the **WageIndicator CBA Database (since 2012)**

WageIndicator.org/cbadatabase

WageIndicator.org
You Share, We Compare

28 languages

50+ countries

Annotated: answers to 249 labour rights related questions on 9 topics (eg Employment Contracts, Gender Equality Issues, etc) + clauses selected

1 Dataset **TEXTS** (.csv dump with all CBA texts in html)

2 Dataset **CLAUSES** (.csv dump with all clauses assigned to a question (= 'bind'))

AIM OF THIS WORK

To ease future CBA texts annotation by finding the parts of texts where a question is answered = assign a 'bind' to paragraphs in new CBA texts

Python script

DATA PROCESSING:

1. We parse texts in paragraphs and create a 'paragraphs dictionary' with languages as keys, containing all the paragraphs for each language.
2. For each clause selected, we check whether it is contained in a paragraph. If that is the case, then the bind is assigned to the paragraph in a new data frame with 1 or 0 identifying whether the bind is assigned to that paragraph or not.
3. We can only do the training on binds that have a sufficient number of assigned paragraphs: we decide for 5 as a minimum.
4. **We perform cleaning (tokenisation - lemmatisation - stop words removal) using NLTK tools (WordNetLemmatizer for English, Snowball Stemmer for other languages).**
5. We add a column with cleaned paragraphs to our data frame.

Dataset **PARAGRAPHS** (all cleaned paragraphs with 1 or 0 for each bind)

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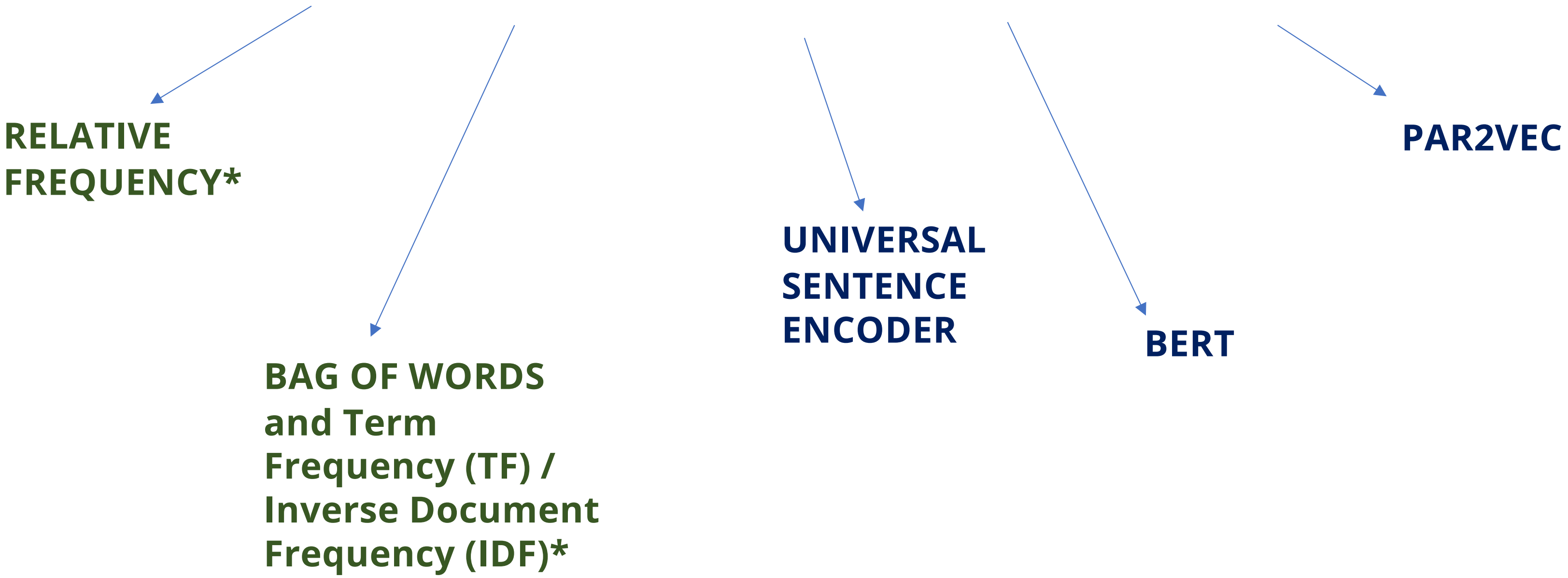
MODELS for CBA ANNOTATION



RELATIVE FREQUENCY*

BAG OF WORDS and Term Frequency (TF) / Inverse Document Frequency (IDF)*

UNIVERSAL SENTENCE ENCODER

BERT

PAR2VEC

Developed within the SSHOC project.

***Simpler and based on word frequency**