Stacked Model based Argument Retrieval and Stance Detection using embedded LSTM model

Touché @ CLEF 2022 - Task 2

Team Olivier Armstrong

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Architecture Overview

- Token Classification
- Query Expansion & Retrieval
- Argument Extraction
- Scoring & Ranking
- Stance Detection
Token Classification

- NER model using RoBERTa classifier
- MS MARCO dataset

Query
Who was a better boxer, Muhammad Ali or Joe Frazier?

Objects
muhammad ali
joe frazier

Aspect
better

Predicate
boxer
Query Expansion & Retrieval

- Original Query + Boolean Query
- Documents Pre-processing
- Elastic Search Client

Objects + Synonyms

MUST WORDS

Aspect + Antonyms/Synonyms
SHOULD WORDS

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Argument Extraction

Stacking Approach for Cross-Domain Argument Identification

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Scoring & Ranking

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Stance Detection

Model Architecture

Datasets

Stack Exchange dumps
L6 - Yahoo! Answers
Comprehensive Questions and Answers

Argument Passage
0: No stance
1: Neutral
2: Pro first object
3: Pro second object
Architecture Overview

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Results

Results for Relevance Evaluation

<table>
<thead>
<tr>
<th>TEAM</th>
<th>TAG</th>
<th>MEAN NDCG@5</th>
<th>CI95 LOW</th>
<th>CI95 HIGH</th>
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<tbody>
<tr>
<td>Olivier Armstrong</td>
<td>tfid_arg_similarity</td>
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Results for Quality Evaluation

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Results for Stance Prediction

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<th>N_RUN</th>
<th>F1_MACRO_TEAM</th>
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- Performed well and had slight improvement over the baseline
Paper:
Stacked Model based Argument Extraction and Stance Detection using Embedded LSTM model
Pavani Rajula, Chia-Chien Hung and Simone Paolo Ponzetto

Github Repo:

Thank you!