

The OpAL System at NTCIR 8 MOAT

Contribution

- Deep study of the performance of new sentiment-topic detection methods
- Introduction of specialised tools (temporal & anaphora)
- New retrieval techniques (using Wikipedia with LSA), improving the performance

ENGLISH MONOLINGUAL

3 runs of the OpAL system for: **opinionated, relevance and polarity judgement tasks**

Determining Sentence Relevance

1st: Use JIRS to find relevant snippets (retrieval based on the question structures, not keywords)

2nd: Faceted Search with Wikipedia and subsequently applied LSA on yahoo docs, to find words related to the topic –concepts:

- We match the query words to a category in Wikipedia and two consecutive words, 3, 4 ...the concepts found are the topic components.
- For each topic component we employ LSA to the first 20 documents (retrieved by Yahoo) to determine the most related words (for LSA we employ Infomap)
- We expand the query using words similar to the topic
- **3rd:** We judge a part for the topic relevance, the temporal appropriateness
- We employ TERSEO for temporal resolution
- We filter the sentences obtained based on topic+ temporal restrictions

Determining Sentence Opinionatedness

1st: opinion words from: General Inquirer + Micro WNOp + Opinion Finder

2nd and 3rd: opinion words from: GI + Micro WordNet Opinion

Judging Sentence Answerness

• Polarity of the sentences: opinion mining system employing SVM ML over the NTCIR 7 MOAT corpus, the MPQA corpus and EmotiBlog + Minipar

• System training:

- the part of speech (POS)
- opinionatedness/intensity - if the word is annotated as opinion word, its polarity, if it is directly dependent of an opinion word or modifier (0 or 1),
- the polarity/intensity and emotion of this word.

1st: General Inquirer, MicroWordNet and the Opinion Finder opinion resources.,

2nd and 3rd: aside from these three sources, the “emotion trigger” resource (Balahur & Montoyo, 2008).

Results of the system runs for opinionated

System Run ID	P	R	F
OPAL 1	17.99	45.16	25.73
OPAL 2	19.44	44	26.97
OPAL 3	19.44	44	26.97

Results of system runs for relevance

System RunID	P	R	F
OPAL1	82.05	47.83	60.43
OPAL2	82.61	5.16	9.71
OPAL3	76.32	3.94	7.49

Results of system runs for polarity

System Run ID	P	R	F
OPAL 1	38.13	12.82	19.19
OPAL 2	50.93	12.26	19.76

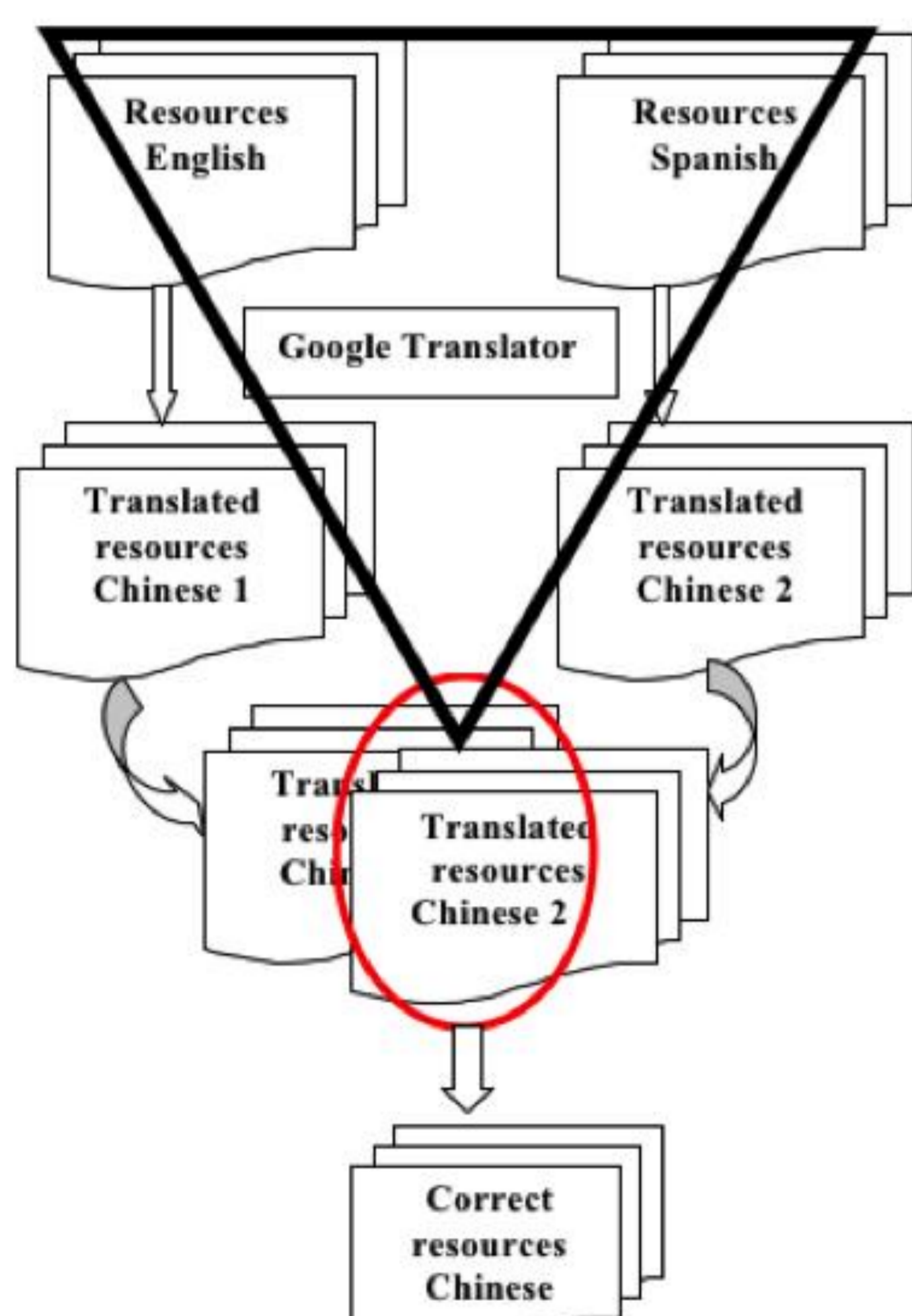
Results of system runs for the cross-lingual task – agreed measures, Traditional Chinese

System Run ID	P	R	F
OPAL 1	3.54	56.23	6.34
OPAL 2	3.35	42.75	5.78
OPAL 3	3.42	72.13	6.32

Results of system runs for the cross-lingual task – non-agreed measures, Traditional Chinese

System Run ID	P	R	F
OPAL 1	14.62	60.47	21.36
OPAL 2	14.64	49.73	19.57
OPAL 3	15.02	77.68	23.55

ENGLISH-CHINESE CROSS-LINGUAL



- Applied a technique known as “triangulation”, using correct parallel resources in 2 initial languages (Eng +Sp)
- Previously translated and cleaned the GI, MicroWN and Opinion Finder lexicons for Spanish + “emotion triggers” available for English and Spanish
- Mapped resources to 4 classes – from original scores – >HN, N, HP, P (-4,-1,1,4)

- Translate topic words found with LSA
 - Score= sum of the values of the opinion words found
 - Condition for sentence - at least 1 topic word + req. pol.
- Run 1: General Inquirer and MicroWordNet
Run 2: Run 1+ “emotion triggers” resource
Run 3: only the Opinion Finder lexicon