

Automatic MT Error Analysis:

Hjerson helping Addicter



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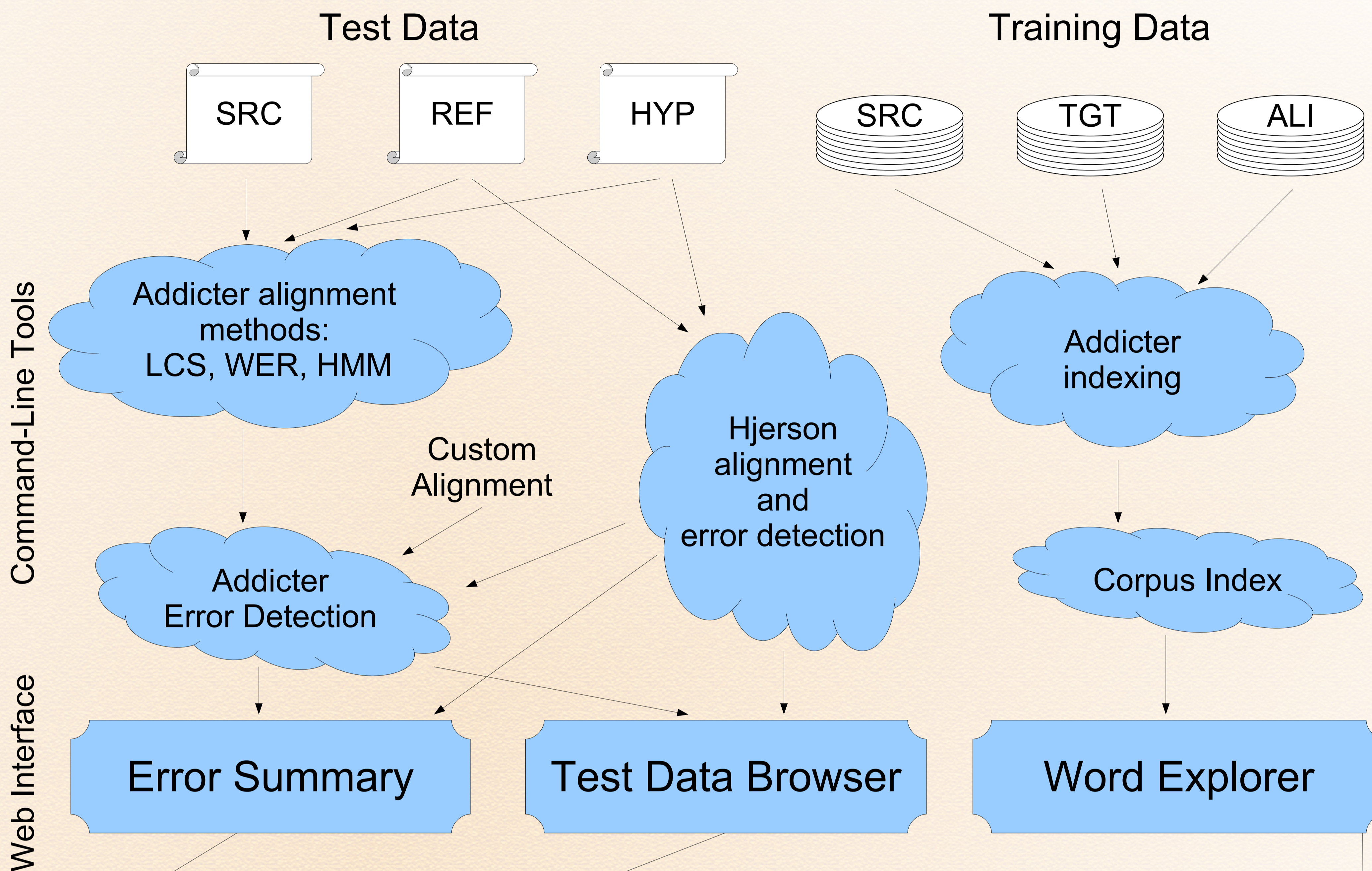


Motivation

- So many MT evaluation metrics
- So many output *just a number*
- We want more:
 - Classes of errors
 - How many errors in each class? *Is my system particularly weak in*
 - word order?
 - morphology?
 - lexical choice?
 - Training data / phrase table inspection: *Where did the system find this crazy translation?*
- Manual error analysis:
 - Precise (probably), but
 - Costly
 - Prone to unsystematicity

Result

- A complex tool for Linux or Windows.
- Built-in web server.
- Error detection evaluated by Fishel et al 2012, (this conference).



Error Summary of TectoMT_WMT09

...with alignment HMM

Error occurrence counts

Error type	Sentence count	Avg per sentence	Count
extraHypWord	198	9.84	1950
missingRefWord	199	11.29	2247
ordErrorShiftWord	78	2.07	162
ordErrorSwitchWords	64	1.23	79
unequalAlignedTokens	161	2.65	427
untranslatedHypWord	107	1.95	209

Sentences without errors

No sentences without any errors

extraHypWord

1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24: 48: 49: 50: 51: 52: 53: 54: 55: 56: 57: 58: 59: 60: 61: 62: 63: 64: 65: 66: 67: 68: 92: 93: 94: 95: 96: 97: 98: 99: 100: 101: 102: 103: 104: 105: 106: 107: 108: 109

missingRefWord

1: 2: 3: 4: 5: 6: 7: 8: 9: 10: 11: 12: 13: 14: 15: 16: 17: 18: 19: 20: 21: 22: 23: 24:

Test Data of TectoMT_WMT09

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This is the test sentence number 33 of 200. Go to [\[previous | next\]](#).

source

in the first round , half of the amount is planned to be spent .

reference translation

v prvním kole bude použita polovina částky .

system hypothesis

v prvním kole polovina částky je plánována , že je strávena .

Gizapp HMM WER viasource

	in	the	first	round	,	half	of	the	amount	is	planned	to	be	spent	.	
src-ref	v	prvním	kole	bude	polovina	částky	bude	polovina	částky	je	plánována	,	že	je	strávena	.
	0-0	1-1 1-2	2-3	3-2	4-3	5-5	6-7 8-6	9-3	10-5	11-3 12-3	13-4	14-7				
ref-src	v	prvním	kole	bude	použita	polovina	částky	.								
	0-0	1-1 1-2	2-3	3-4 3-9 3-11 3-12	4-13	5-5 5-10	6-7 6-8	7-14								
hyp-src	v	prvním	kole	polovina	částky	je	plánována	,	že	je	strávena	.				
	0-0	1-1 1-2	2-3	3-5	4-7 4-8	5-9	6-10	7-4	8-11	9-12	10-13	11-14				
ref-hyp	v	prvním	kole	bude	použita	polovina	částky	.								
	0-0	1-1	2-2		3-5	4-6	5-3	6-4	7-11							
hyp-ref	v	prvním	kole	polovina	částky	je	plánována	,	že	je	strávena	.				
	0-0	1-1	2-2	3-5	4-6							11-7				

Automatically Identified Errors

untranslatedHypWord

missingRefWord

bude použita

extraHypWord

je plánována že je strávena

Vilar et al., 2006

- Missing word
 - Content word
 - Filler word
- Word order
 - Word level
 - Local range
 - Long range
 - Phrase level
 - Local range
 - Long range
- Incorrect word
 - Sense
 - Wrong lexical choice
 - Incorrect disambiguation
 - Incorrect form
 - with same lemma
 - Style
 - Idiom
 - Extra word
 - extraHypWord
 - Unknown word
 - Unknown stem
 - Unseen form
 - Punctuation
- Addicter
 - missingRefWord
- Hjerson
 - Missing word
 - Reordering error
 - ordErrorSwitchWords
 - ordErrorShiftWord
 - Incorrect word
 - Lexical error
 - Inflectional error
 - Extra word
 - extraHypWord
 - untranslatingHypWord



stars

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Examples of the word in the data: The word 'stars' occurs in 3 sentences. This is the sentence number 3 in file TRS.

source

stars under the starlit paris sky .

translation

hvězdy pod hvězdným pařížským nebem .

	stars	under	the	starlit	paris	sky	.
0-0	1-1	2-2 3-2	4-3	5-4	6-5		
hvězdy	pod	hvězdným	pařížským	nebem	.		
0-0	1-1	2-2 3-2	4-3	5-4	6-5		
hvězdy	pod	hvězdným	pařížským	nebem	.		
0-0	1-1	2-2 2-3	3-4	4-5	5-6		

[next](#) | [training data only](#) | [test/reference](#) | [test/hypothesis](#)

Alignment summary

The word 'stars' occurred 3 times and got aligned to 1 distinct words/phrases. The most frequent ones follow (with frequencies):

1. hvězdy|content|hvězda (3)