

# **CoNLL-2005 Shared Task: Spotlight on System Combination**

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# System Properties: System Combination

		comb	type
1	punayakanok	$n$ -cha+col	ac-ILP
2	haghighi	$n$ -cha	re-rank
3	marquez	cha+upc	s-join
4	pradhan	cha+col→chunk	stack
	...		
6	tsai	ME+SVM	ac-ILP
	...		
9	tjongkimsang	ME+SVM+MBL	s-join
10	yi	cha+AN+AM	ac-join
	...		
	...		
19	sutton	$n$ -bikel	re-rank

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# System Combination

- At argument level
- List of candidate arguments:
  - ★ Each system proposes arguments, scored according to overall  $F_1$  on development
  - ★ The final score for an argument is the sum of scores given by systems
- Greedy selection:
  - ★ Repeat, until no more arguments in the candidate list:
    - \* Select argument candidate with more score
    - \* Remove conflicting arguments from candidate list, wrt. overlapping

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## System Combination : Results on WSJ test

F1	Prec.	Rec	Combination
80.21	79.10	81.36	punyakanok+haghighi+pradhan
80.10	78.44	81.82	punyakanok+haghighi+pradhan+che
80.06	79.84	80.28	punyakanok+pradhan+tsai
80.04	78.14	82.03	punyakanok+haghighi+marquez+pradhan
80.00	77.96	82.15	punyakanok+haghighi+pradhan+yi
79.98	78.75	81.24	haghighi+marquez+pradhan+tsai
	...		102 more combinations
79.44	82.28	76.78	punyakanok

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## System Combination : Results on Brown test

F1	Prec.	Rec	Combination
69.74	69.40	70.10	haghighi+marquez+pradhan+tsai
69.72	68.81	70.65	punyakanok+haghighi+marquez+pradhan
69.63	69.54	69.73	haghighi+marquez+pradhan
69.59	69.08	70.10	haghighi+marquez+pradhan+che
69.57	68.44	70.74	punyakanok+haghighi+marquez+pradhan+tsai
69.56	70.00	69.13	marquez+pradhan+che
	...		3005 more combinations
67.75	73.38	62.93	punyakanok

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## System Combination : Upper Bound Recall

System	WSJ	Brown
Top-1	76.82	62.93
Top-3	85.93	75.47
Top-5	87.86	78.64
Top-10	90.19	82.82
Top-15	91.50	84.89
Top-19	93.13	86.86