

Team 8

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Deliverable 2: Question Classifier *Overview*

- System
- Features
- Experiments



Deliverable 2: Question Classifier *System*

Multiple Approaches:

- SNoW
- LBJ (also from Cognitive Computation Group)
- Mallet and the Python NLTK



Deliverable 2: Question Classifier *Features*

Binary features:

- Bag-of-Words
- Bag-of-POStags
- First two words (when_did)



Deliverable 2: Question Classifier *Experiments*

Table One, Li and Roth testing data,
Results With Different Mallet Classifier Algorithms

	Train, real-valued	Test over 1000 questions	Stemmed words (Lancaster)	Trained on 5500 questions	Binary Features
MaxEnt	0.996	0.762	0.758	0.846	0.862
BalancedWinnow	0.999	0.742	0.784	0.85	0.854
DecisionTree	0.547				
NaiveBayes	0.943	0.658	0.694	0.758	
c64	0.797				



Deliverable 2: Question Classifier

Results

On the TREC-2005 testing data:

label	0	1	2	3	4	5	total
0 HUM	112	2	9	21	2	.	146
1 NUM	3	138	5	.	4	.	150
2 LOC	2	3	69	5	4	.	83
3 ENTY	17	5	1	29	5	.	57
4 DESC	.	.	2	2	11	.	15
5 ABBR	1	3	4

Test data accuracy= **0.796**

On the Li and Roth test data (TREC_10.label.txt):

label	0	1	2	3	4	5	total
0 DESC	127	6	.	1	3	1	138
1 ENTY	10	67	.	9	3	5	94
2 ABBR	1	1	7	.	.	.	9
3 HUM	3	2	.	59	.	1	65
4 NUM	5	3	.	2	99	4	113
5 LOC	1	1	.	3	2	74	81

Test data accuracy= **0.866**



Deliverable 2: Question Classifier

Future Work

- Using LBJ for question Classification
- Use of semantic features



Deliverable 2: Question Classifier

That's all.

