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Arabic Language Technologies, QCRI

## Tasks

Question	Question	Question	YES NO UNS
direct	good*		
related	...		
irrelevant	potential*		
irrelevant	...		
irrelevant	bad*		
arabic	English A	English B	

## Features

### Word n-Grams

Tf-idf-weighted, independently obtained from question (q) and comment (c).

ar n={1,2} A B Stopworded n = {1,2,3}

### User's Profile (Comments)

GOOD by U	avg. len. of {G,P,B,D}
POTENTIAL by U	For all the questions and only those from the same category as the current one.
BAD by U	
DIALOGUE by U	B

### Polarity

$$pol(c) = \sum_{w \in c} pol(w)$$

Binary contains yes, can, sure, wish, would  
contains no, not, neither

### Heuristics

Binary has a URL length of c Integer  
has an email A B

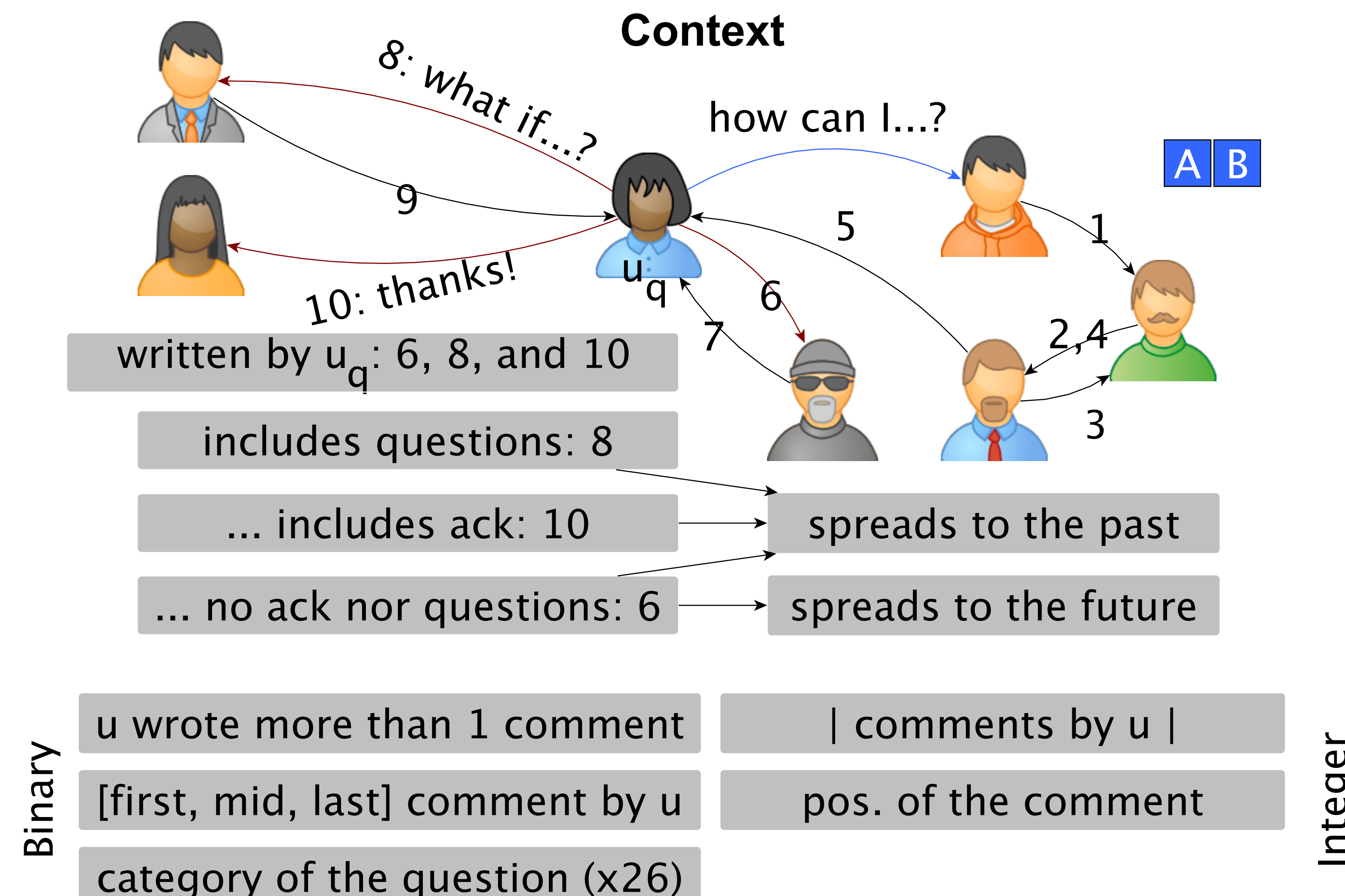
QCRI participation to SemEval-2015 Task 3. More in the Community Question Answering poster.

## Features (cont.)

### Similarity

Lexical similarity ar A B	Syntactic similarity A B
greedy string tiling	Syntactic trees (PTK)
longest common subseq.	Chunks to POS to lemmas
Jaccard coefficient	Semantic similarity A B
word containment	Latent semantic analysis
idf-weighted intersections	Qatar Living data
cosine similarity	GloVe and Composes
Word [1-4]-grams	Common crawl

### Context



## Learning Models

One-vs-rest SVM (logistic regressor) ar A	One-vs-rest SVM (linear classifier)
B	SVM (linear classifier) GOOD

## Results + Features Exploration

Ranking at SemEval				
ar	DIRECT	IRREL	REL	F <sub>1</sub>
	77.31	91.21	67.13	78.55 1st
(only) n-grams	30.40	41.07	72.27	47.91
cont <sub>1</sub>	74.89	63.68	91.23	76.60
similarities	61.83	25.63	82.55	56.67
(without) n-grams	75.51	91.31	63.85	76.89
cont <sub>1</sub>	69.50	82.85	50.87	67.74
similarities	77.24	91.07	67.76	78.69
A	GOOD	BAD	POT	F <sub>1</sub>
	78.45	72.39	10.40	53.74 3rd
context	67.65	45.03	11.51	47.90
(only) n-grams	71.22	40.12	5.99	44.86
heuristics	76.46	41.94	7.11	52.57
similarities	62.93	44.58	9.62	46.16
(without) context	76.05	41.53	8.98	51.50
n-grams	77.25	45.56	12.23	55.17
heuristics	73.84	65.33	6.81	48.66
similarities	78.02	71.82	9.88	53.24
B	YES	NO	UNSURE	F <sub>1</sub>
primary	80.00	44.44	36.36	53.60 3rd

## Current work

- Pipeline development on top of Apache UIMA
- Further experiments with other features and settings
- Exploitation of the classifiers in the Qatar Living website
- Core technology for the QCRI-ALT CQA

**Acknowledgments:** This research is developed by the Arabic Language Technologies (ALT) group at Qatar Computing Research Institute within the Qatar Foundation in collaboration with MIT. It is part of the Interactive sYstems for Answer Search (Iyas) project.