DUTH at TREC 2013 Contextual Suggestion Track

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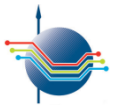

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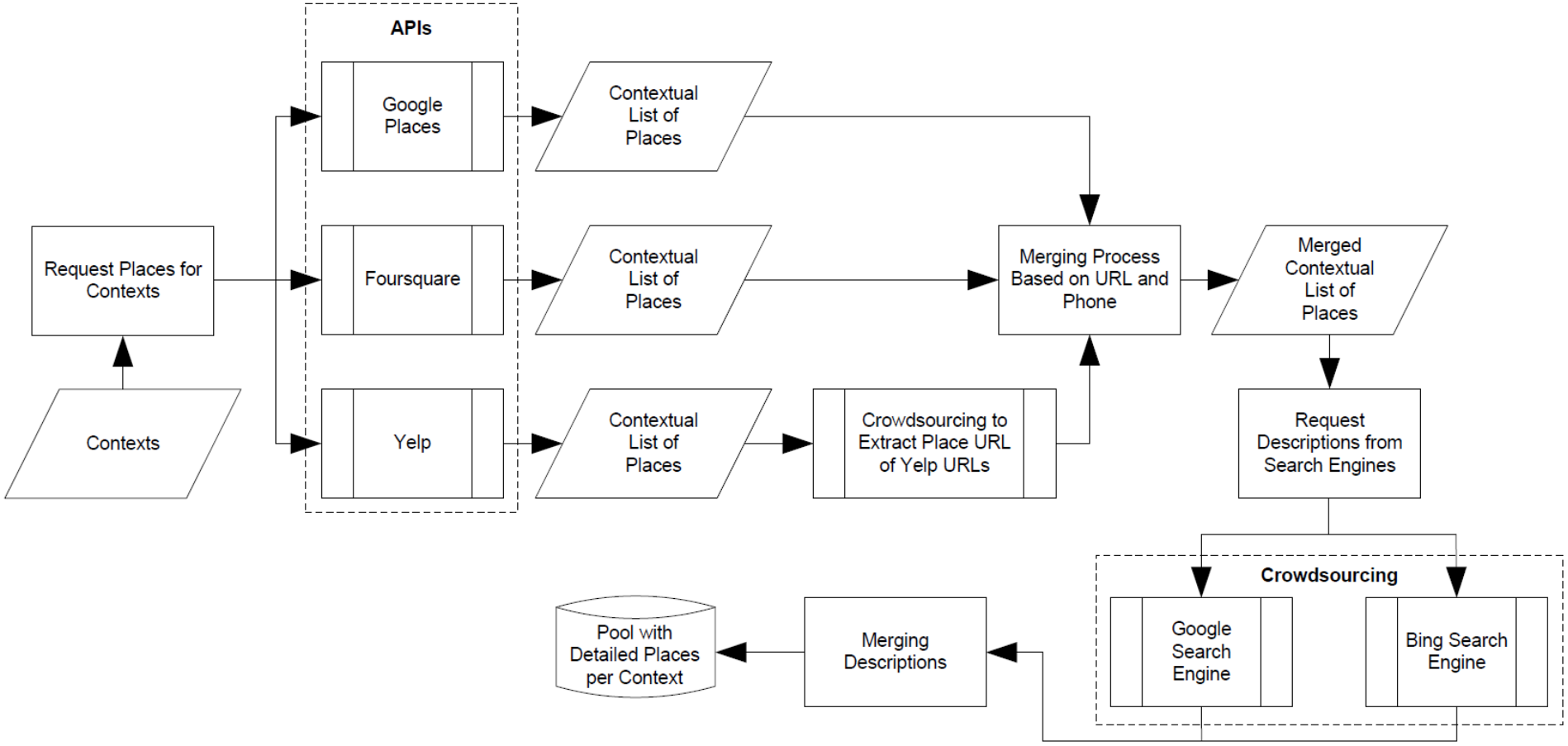
Summary

Summary of this work

- Context processing
  - Collect POIs from Google Places, Foursquare and Yelp
  - The collected POIs are enriched by adding snippets from the Google and Bing search engines using crowdsourcing techniques
- Suggestion processing methods
  1. The 1st method submits each candidate place as a query to an index of rated examples and scores it based on the top-k user's ratings
  2. The 2nd method is based on Rocchio's algorithm and uses the rated examples per profile to generate a personal query which is then submitted to an index of places

Context Processing

Overview of Context Processing



Collected Data

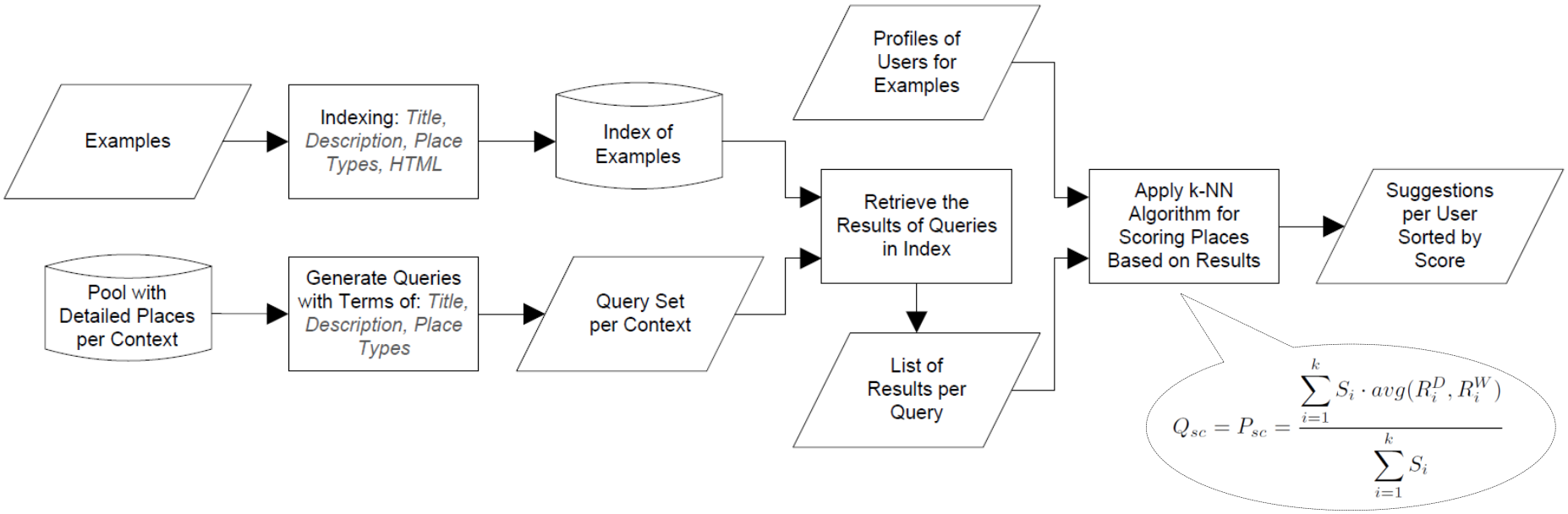
Table 1: Statistical information about the contextual list of places.

Context	Google	Foursquare	Yelp	Merged / Sum
Crestview, FL	103	33	38	131 / 174
Anniston, AL	139	53	26	168 / 218
Sumter, SC	147	52	40	173 / 239
...	...	...	...	...
Orlando, FL	590	328	497	1008 / 1415
Atlanta, GA	694	559	738	1378 / 1991
Washington, DC	812	1126	1275	2378 / 3213
Total *(with URLs)*	14945	7664	8394	22600 / 31003
Total *(retrieved)*	—	68517	15787	—

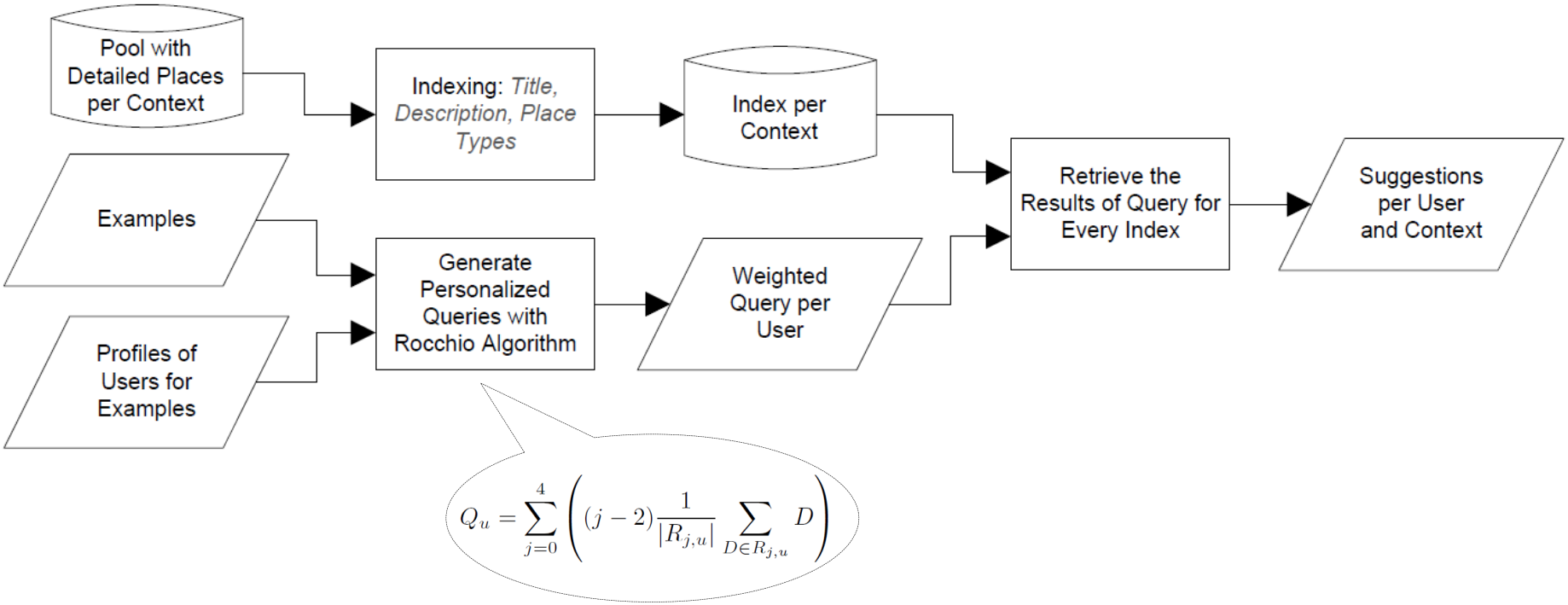
Sorting by places ↓

Suggestion Processing

Suggestion Model based on k-NN Classification
(Run DuTH_A)



Suggestion Model Based on a Rocchio-like Method
(Run DuTH_B)



Official Results

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Table 2: Mean of results over all the profiles and contexts for P@5, MRR and TBG measures.

	P@5	MRR	TBG
Runs:			
DuTH_A	0.3283	0.4836	1.3109
DuTH_B	0.4090	0.5955	1.8508
Difference:			
DuTH_B vs _A	+24,58%	+23,14%	+41,19%

Table 3: Number of context-profile pairs with Median-or-better and Best scores per measure.

Runs	Median-or-better			Best		
	P@5	MRR	TBG	P@5	MRR	TBG
DuTH_A	189	175	151	25	86	22
DuTH_B	**209**	206	185	47	**114**	40
Total: 223 judged context-profile pairs						

Conclusions

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- Both approaches seem very promising
- DuTH_B performed better than DuTH_A
- Compared to other groups
  - DuTH_B scored almost firmly above the median (in P@5 and MRR)
  - DuTH_B achieved the best results in almost half of the judged context-profile pairs (at MRR)

- Future work
  - Failure analysis
  - Further parameterize and tune the Rocchio-like approach
  - Apply our suggestion methods in our funded ATLAS (Advanced Tourism PLAnning System) Project

Thank you,

» any questions ?