











TABLE II. EXPERIMENTAL PERFORMANCE OF PROPOSED MODELS. THE AVERAGE TOP- $N$  ACCURACY RATE, AVERAGE TOP- $N$  INTERSECTION RATE, AND AVERAGE PRECISION ( $AP$ ) OF EACH COMBINING RULE ON TWO DATA SETS (10 SELECTED QUESTIONS AND FACTOID Q&A CORPUS) WITH RETURN PAGES OF SEARCH ENGINES AT 5, 10 RESPECTIVELY.

Corpus	Returned pages	Method	The average top- $N$ accuracy rate					The average top- $N$ intersection rate					$AP$	
			$N=1$	$N=2$	$N=3$	$N=4$	$N=5$	$N=1$	$N=2$	$N=3$	$N=4$	$N=5$		
Selected questions	5	Baseline	Google	0.9000	0.7000	0.6667	0.6500	0.6200	0.6000	0.4000	0.4333	0.4250	<b>0.4200</b>	0.6355
			Yahoo!	<b>1.0000</b>	<b>0.9000</b>	0.7333	<b>0.7250</b>	0.6400	0.7000	0.7000	0.5000	0.4250	0.3800	0.6784
			Bing	0.8000	0.8000	0.6000	0.6000	0.6000	0.6000	0.6000	0.4333	0.4000	0.4000	0.6512
			Max	0.8000	0.7000	0.7000	0.6000	0.6000	0.5000	0.5500	0.5000	0.4000	0.3600	0.6442
			Min	0.8000	0.8500	<b>0.7667</b>	0.7000	<b>0.6600</b>	<b>0.8000</b>	0.6000	0.4667	0.4250	<b>0.4200</b>	<b>0.6831</b>
		Comb. Rule	Mean	<b>1.0000</b>	<b>0.9000</b>	<b>0.7667</b>	0.6500	0.6400	0.7000	<b>0.7500</b>	<b>0.5333</b>	<b>0.4500</b>	0.3800	0.6812
			D-S	0.9000	0.7000	0.7333	0.6500	0.6200	0.7000	0.4000	0.4333	0.4250	0.3800	0.6411
			Yager	0.9000	0.7000	0.7333	0.6500	0.6200	0.7000	0.4000	0.4333	0.4250	0.3800	0.6411
			CA	<b>1.0000</b>	<b>0.9000</b>	<b>0.7667</b>	0.6500	0.6400	0.7000	<b>0.7500</b>	<b>0.5333</b>	<b>0.4500</b>	0.3800	0.6801
			CA	<b>1.0000</b>	<b>0.9000</b>	<b>0.7667</b>	0.6500	0.6400	0.7000	<b>0.7500</b>	<b>0.5333</b>	<b>0.4500</b>	0.3800	0.6801
	10	Baseline	Google	0.8000	0.7000	0.6667	0.6500	0.6400	0.6000	0.4500	0.4000	0.3500	0.4400	0.6358
			Yahoo!	<b>1.0000</b>	<b>0.9000</b>	0.7333	0.7000	0.6400	0.7000	0.6500	0.4667	0.4250	0.3800	0.6645
			Bing	0.9000	0.8500	0.6667	0.5500	0.5800	<b>0.8000</b>	0.6000	0.4667	0.4250	0.4000	0.6799
			Max	0.8000	0.8000	0.7000	0.6750	0.6400	0.5000	0.6000	0.5000	0.4500	0.4000	0.6419
			Min	0.9000	0.8000	0.7667	<b>0.7250</b>	<b>0.7000</b>	<b>0.8000</b>	0.5500	0.5000	<b>0.4750</b>	<b>0.4800</b>	<b>0.6877</b>
		Comb. Rule	Mean	<b>1.0000</b>	<b>0.9000</b>	<b>0.8000</b>	0.6000	0.6200	0.7000	<b>0.7500</b>	<b>0.5333</b>	0.4500	0.4000	0.6738
			D-S	0.9000	0.6500	0.6667	0.6000	0.6000	0.7000	0.4000	0.4333	0.4000	0.3800	0.6408
			Yager	0.9000	0.6500	0.6667	0.6000	0.6000	0.7000	0.4000	0.4333	0.4000	0.3800	0.6408
			CA	<b>1.0000</b>	<b>0.9000</b>	<b>0.8000</b>	0.6000	0.6400	0.7000	<b>0.7500</b>	<b>0.5333</b>	0.4500	0.4000	0.6753
			CA	<b>1.0000</b>	<b>0.9000</b>	<b>0.8000</b>	0.6000	0.6400	0.7000	<b>0.7500</b>	<b>0.5333</b>	0.4500	0.4000	0.6753
Factoid Q&A	5	Baseline	Google	0.3897	0.4717	0.5088	0.5407	0.5700	0.0449	0.0872	0.1501	0.2719	0.3782	0.5505
			Yahoo!	0.7701	0.6978	0.6548	0.6256	0.6018	0.2707	0.2844	0.3419	0.3706	0.3921	0.5850
			Bing	0.8530	0.8025	0.7579	0.7261	0.7027	0.2544	0.2800	0.3257	0.3703	0.4042	0.5799
			Max	0.7538	0.7124	0.7159	0.7007	0.6830	0.1599	0.2287	0.2900	0.3852	0.4312	0.5781
			Min	0.7404	0.6689	0.6136	0.5828	0.5582	0.3302	0.2973	0.3399	0.3638	0.3858	0.6063
		Comb. Rule	Mean	<b>0.8670</b>	0.8445	0.7950	0.7636	0.7366	<b>0.3349</b>	<b>0.3474</b>	0.3987	0.4586	0.5056	0.6218
			D-S	0.6989	0.5674	0.5441	0.5373	0.5261	0.3191	0.2681	0.2818	0.3299	0.3387	0.6001
			Yager	0.6989	0.5674	0.5441	0.5373	0.5261	0.3191	0.2681	0.2818	0.3299	0.3387	0.6001
			CA	0.8652	<b>0.8448</b>	<b>0.7966</b>	<b>0.7649</b>	<b>0.7390</b>	0.3372	0.3468	<b>0.3993</b>	<b>0.4589</b>	<b>0.5069</b>	<b>0.6221</b>
			CA	0.8652	<b>0.8448</b>	<b>0.7966</b>	<b>0.7649</b>	<b>0.7390</b>	0.3372	0.3468	<b>0.3993</b>	<b>0.4589</b>	<b>0.5069</b>	<b>0.6221</b>
	10	Baseline	Google	0.2742	0.4495	0.5270	0.5665	0.5610	0.0088	0.0630	0.1725	0.2655	0.3484	0.5433
			Yahoo!	0.7742	0.7115	0.6636	0.6294	0.6057	0.2707	0.2768	0.3359	0.3617	0.3908	0.5831
			Bing	0.8337	0.7812	0.7495	0.7167	0.6860	0.2935	0.2973	0.3086	0.3547	0.3876	0.5807
			Max	0.7497	0.7211	0.7001	0.6944	0.6844	0.2602	0.2447	0.3145	0.3765	0.4350	0.5905
			Min	0.7334	0.6844	0.6328	0.6098	0.5944	<b>0.3279</b>	0.2940	0.3038	0.3508	0.3895	0.5983
		Comb. Rule	Mean	0.8390	0.8238	<b>0.7962</b>	<b>0.7754</b>	0.7540	0.3273	<b>0.3296</b>	0.4082	0.4545	0.5034	<b>0.6190</b>
			D-S	0.6931	0.5522	0.5511	0.5395	0.5300	0.3162	0.2620	0.2832	0.3267	0.3378	0.5916
			Yager	0.6931	0.5522	0.5511	0.5395	0.5300	0.3162	0.2620	0.2832	0.3267	0.3378	0.5916
			CA	<b>0.8396</b>	<b>0.8258</b>	0.7946	<b>0.7754</b>	<b>0.7544</b>	<b>0.3279</b>	0.3288	<b>0.4084</b>	<b>0.4549</b>	<b>0.5040</b>	<b>0.6190</b>
			CA	<b>0.8396</b>	<b>0.8258</b>	0.7946	<b>0.7754</b>	<b>0.7544</b>	<b>0.3279</b>	0.3288	<b>0.4084</b>	<b>0.4549</b>	<b>0.5040</b>	<b>0.6190</b>

on the match between the content of the site and the question. Our main reported findings have significant implications for the design of social Q&A systems.

In our observations, we also find that the content preference of social media sites, whatever they are, are slowly changing over time. It is easy to understand since the users' interests, social sites' characteristics, and the outside world keep changing. However, time-varying content poses a great challenge to dynamically capture and understanding the nature of social sites, and this also is our future work.

#### ACKNOWLEDGMENT

This work was sponsored, in part, by a research fund from National Security Innovations (NSI), the National Natural Science Foundation of China (61001178), the Excellent Talents Foundation of Beijing, the Importation and Development of High-Caliber Talents Project of Beijing Municipal Institutions (CITCD201404052), and the Basic Research Program of Beijing University of Technology.

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