

Facebook

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User Group Classification Scheme for Efficient Social Search on the Facebook

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Facebook

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1. (Social Search)

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가

FolkRank[4] SocialSimRank[5], SNDocRank[6]

[1]. 가

가

PageRank
PeopleRank[2]
Aardvark[3] . PeopleRank

가

2. Facebook

가

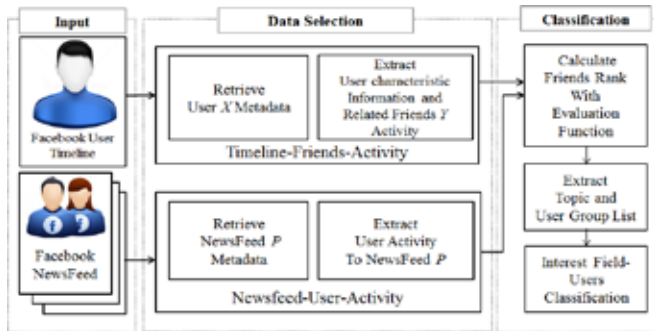
Aardvark

1 . Facebook
Facebook

가 Facebook
 'Like', 'Comment', 'Tag', 'Share'
 (Activity)
 'Timeline-Friends-Activity'
 가
 'Newsfeed-User-Activity' 가

$$R_t = \frac{\sum_{a_t \in A_t} cnt(a_i, x_k, y_i) * ActWgt(a_t) * TimeWgt(t_y)}{\sum_{y_i} \sum_{a_t \in A_t} cnt(a_i, x_k, y_i) * ActWgt(a_t)} \quad (1)$$

A_t Timeline-Friends-Activity a_t
 Count X x_k
 Y_i a_i
 가 (ActWgt, Activity
 R_t
 weight) 가 ,
 가 (TimeWgt, Time weight)
 X Y_i
 R_t



(1)

2.1 Timeline-Friends-Activity

Timeline-Friends-Activity
 X
 Y_i X
 가 Facebook
 X
 Y_i X
 A_t < 1>

(A_t)	
Like(X, Y_i)	X Y_i 가 'Like'
Comment(X, Y_i)	X Y_i 가
Publish Contents (X, Y_i)	X Y_i 가
Tag(X, Y_i)	Y_i 가 X
Contents share(X, Y_i)	Y_i 가 X

< 1> Timeline-Friends-Activity

2.2 Newsfeed-User-Activity

Newsfeed-User-Activity X 가
 Y_i 가 P_i
 X
 가 P_i
 X A_n < 2>

(A_n)	
Like(P_i, X)	X 가 P_i 'Like'
Comment(P_i, X)	X 가 P_i
Tag(P_i, X)	X 가 P_i

< 2> Newsfeed-User-Activity

P_i
 C_n 가 < 3> X 가 P_i
 가 P_i
 P_i
 < 3>

(C_n)	
Link	P_i
General contents	P_i
Event	P_i
Category Properties	P_i 가 (Ex. 'Music', 'Interest', 'TV' etc.)

< 3>

$$R_n = \frac{\sum_{a_n \in A_n} cnt(a_i, y_k, P_i) * ActWgt(a_n) * TimeWgt(t_x) * C_n(P_i)}{\sum_{P_i} \sum_{a_n \in A_n} cnt(a_i, y_k, P_i) * ActWgt(a_n)} \quad (2)$$

A_n Newsfeed-User-Activity a_n
 Count a_i Y_i P_i X
 Timeline-Friends-Activity $ActWgt$, $TimeWgt$
 R_n

3. Classification

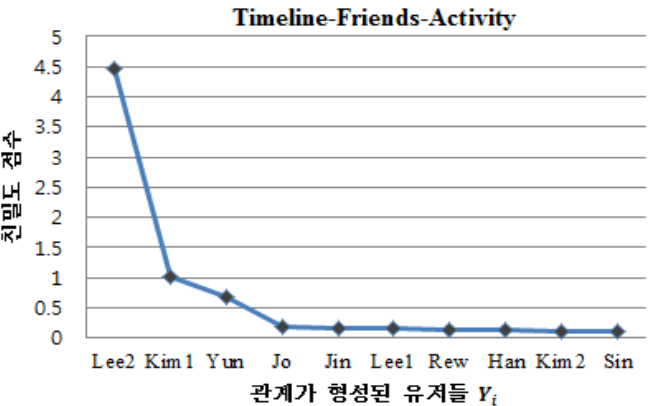
Timeline-User-Activity Newsfeed-User-Activity
 X Y_i
 Facebook
 k X Y_i
 T T $(X_k, Y_{i,k})$ (3)

T X
 $w_{i,k}$ Y_i T
 $w_{j,k}$
 가 $w_{i,k}$
 Similarity $-$ Cosine
 가 1 가
 가 0 가

$$Sim_T(X, Y_i) = \frac{\sum_{k=1}^n w_{i,k} * w_{j,k}}{\sqrt{\sum_{k=1}^n w_{i,k}^2 * \sum_{k=1}^n w_{j,k}^2}} * Norm(R_t + R_n) \quad (4)$$

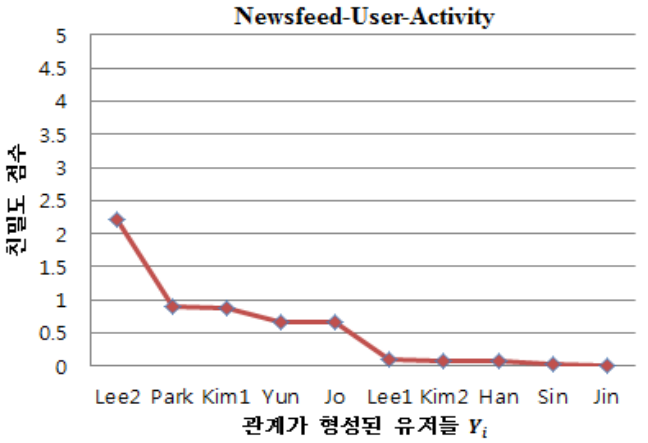
	T	'Musician'	'Clothing'
X		{'Eric', 'SWV', 'LSG', 'Yoon', etc.}	{'BA', 'Msk shop', etc.}
Y_1		{'Eric', 'Kim', 'Evan', etc.}	{'Polo'}
...	
Y_i		{'LSG', 'Girls', 'Faith', Lee', etc.}	{'BA', 'TGNT', 'Liful', etc.}

4. Facebook
 400 , 300
 Timeline-Friends-Activity (1)



(2) Timeline-Friends-Activity

Newsfeed-User-Activity
 1500
 X
 (2) 3

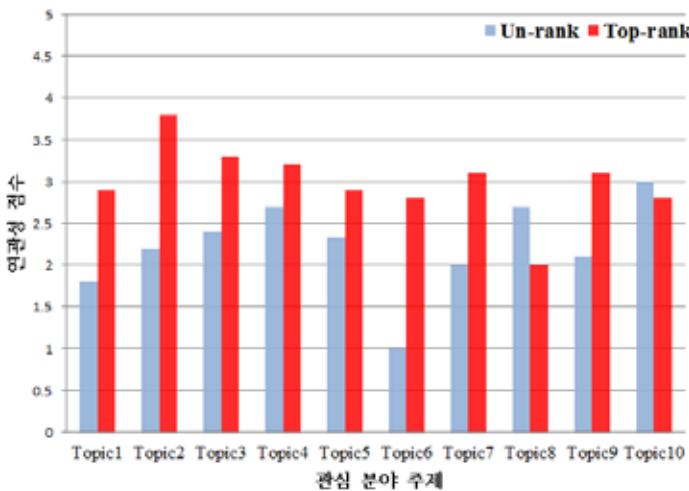


(3) Newsfeed-User-Activity

Y_i 가 Top-rank 가 Top-rank Un-rank
 가 X 가 Top-rank 25% 가 Top-Rank 가
 Classification < 5> 가 T (4) 가

Rank / T	Top-rank	가
'Musician'	Lee2, Park, Jin, Sin, Jo 10	0.2151
'Clothing'	Park, Kim1, Lee1, Han, Sin 10	0.1877
'Entertainer'	Jin, Lee2, Kim1, Lee1, Han 10	0.1046

< 5> X Y_i T 가
 가 4 가 Un-rank 가
 Top-rank Un-rank 가
 Un-rank, Top-rank Facebook Top-rank
 rank 가 Un-rank 5
 ,0 가



(4) Un-rank Top-rank
 Un-rank 2.223, Top-rank 2.99
 'Topic8' 'Topic10'
 Un-rank 가
 Top-rank 가

5.

Facebook Top-rank
 가 Facebook 가

6. Acknowledgment

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