

FORK: Feedback-aware ObjectRank-based Keyword Search over Linked Data

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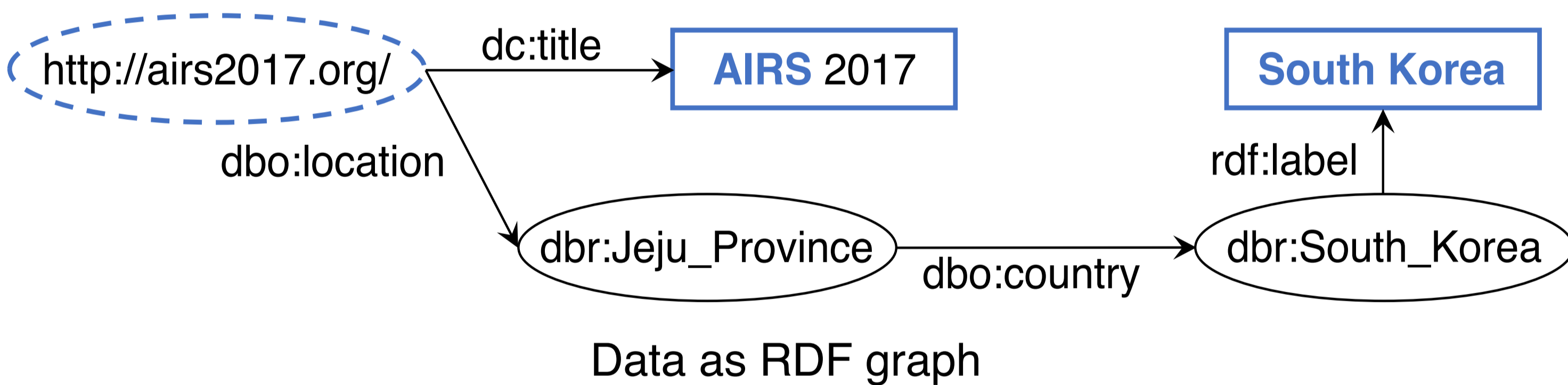
Highlights

- FORK
 - ObjectRank-based keyword search over Linked Data (LD)
 - Relevance feedback-based authority transfer weights learning
- Experiments
 - Ensure weights are learnt properly.
 - Best-learnt ObjectRank achieves the best accuracy.

Keyword Search over LD

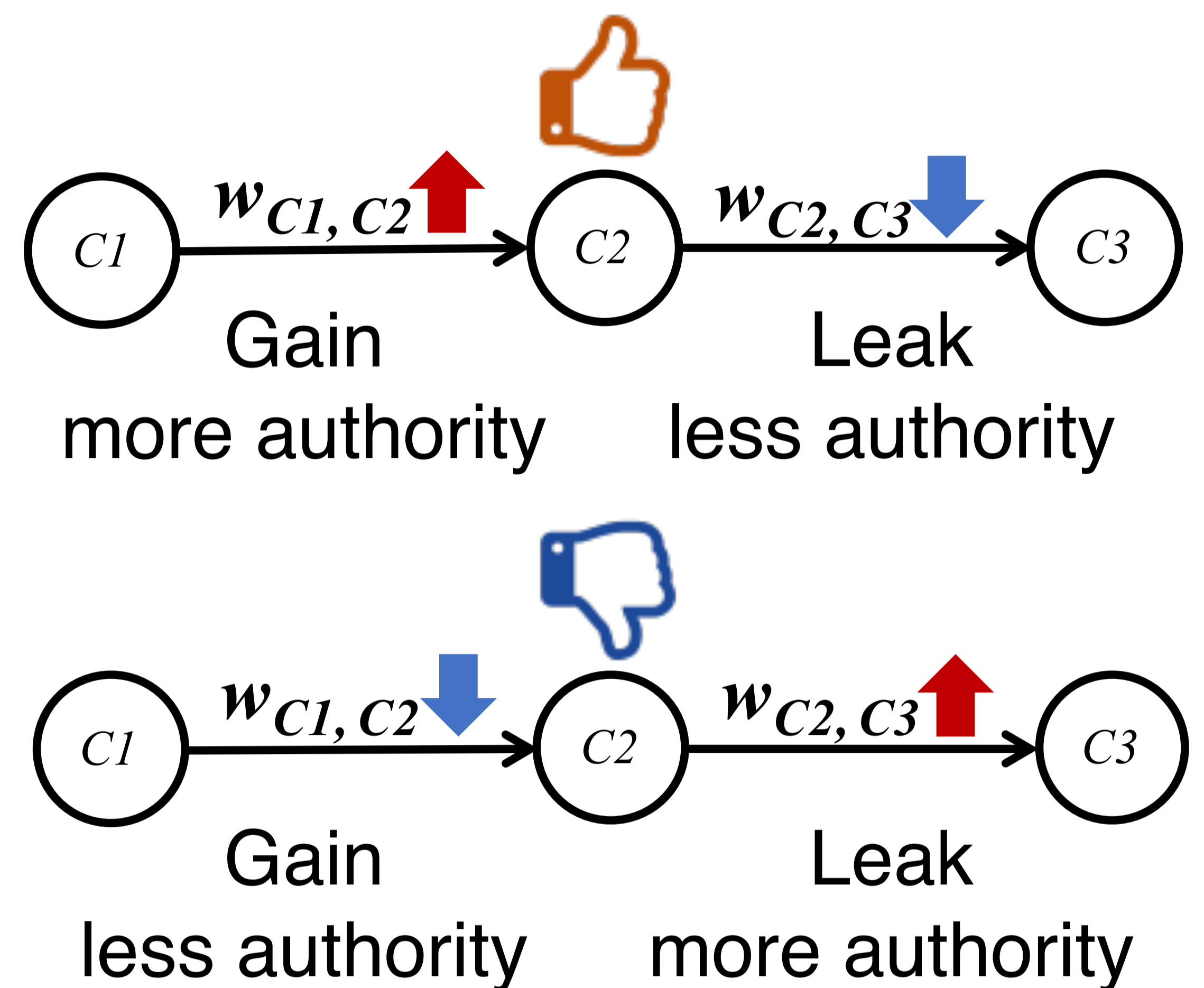
- User-friendly search method.
- Find entities related with input keyword query.

("AIRS", "South Korea") → http://airs2017.org/
Keyword query Results

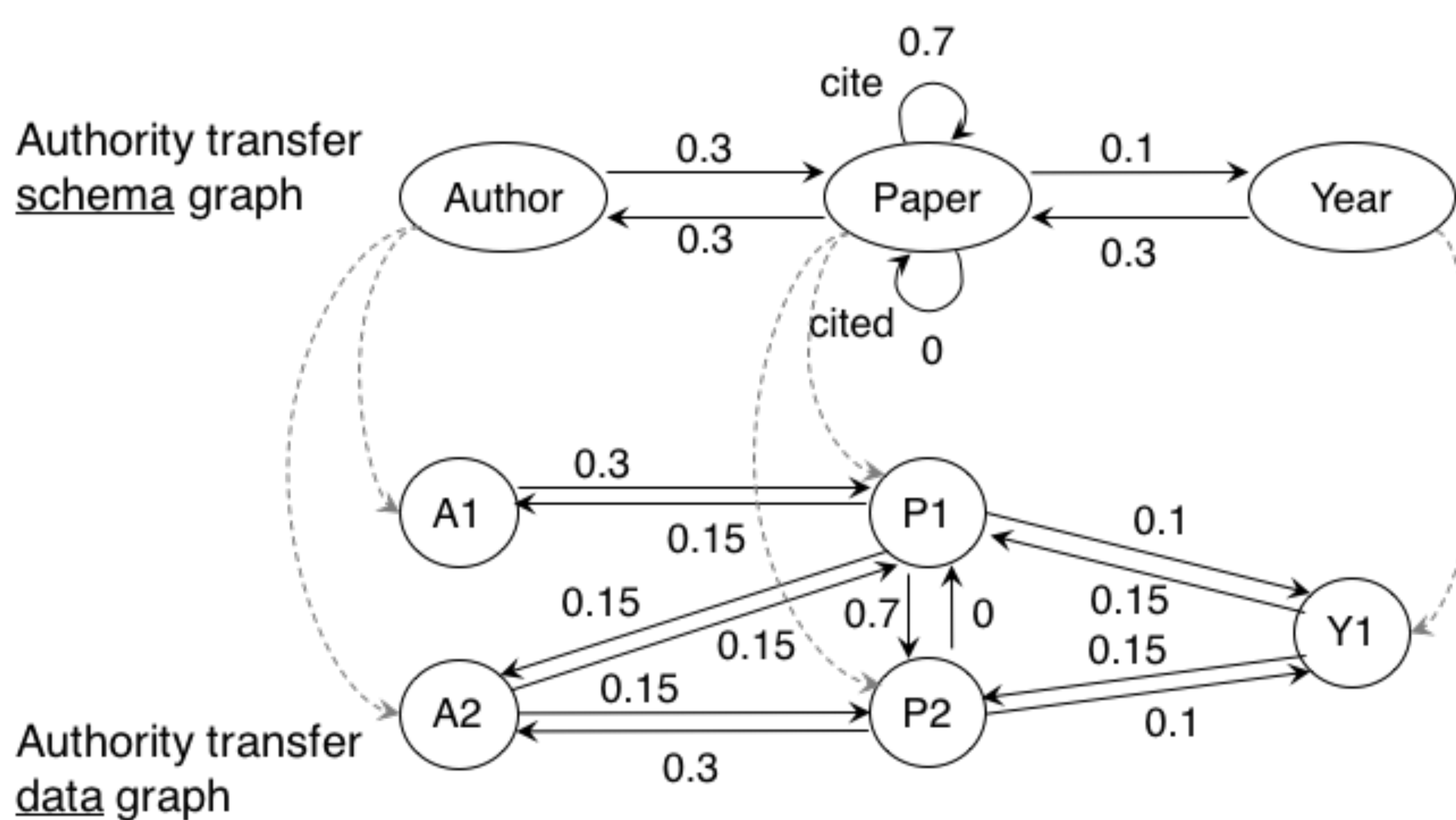


Relevance Feedback

Input: relevance judgements on (top-k) search results
Output: modified edge weights on schema graph



ObjectRank [4]



Global ObjectRank
(Precomputed)

$$\mathbf{r}_g^{(t+1)} = d\mathbf{A}\mathbf{r}_g^{(t)} + \frac{1-d}{|O|}\mathbf{e}$$

Query-specific ObjectRank
(Compute when query comes)

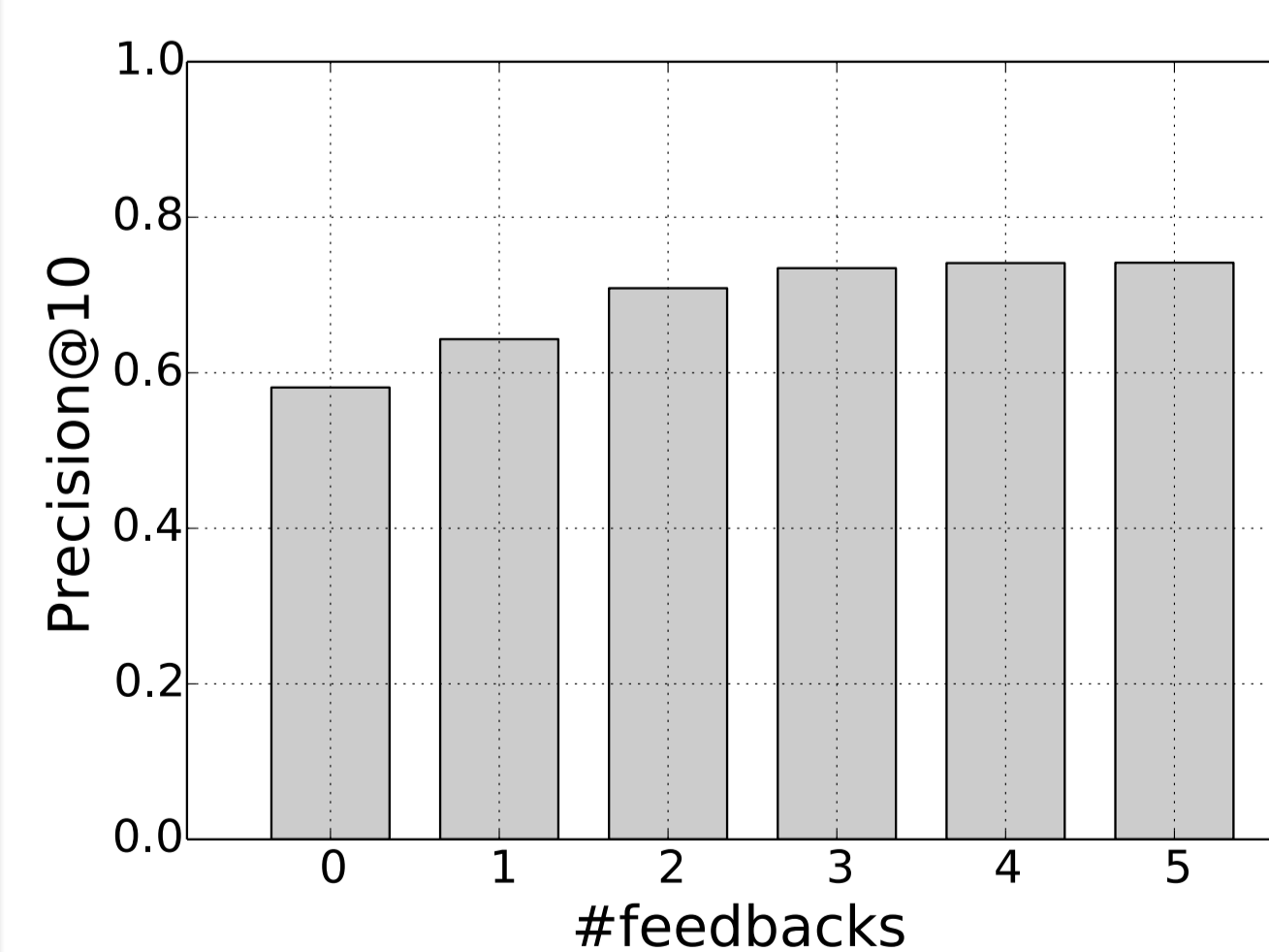
$$\mathbf{r}_q^{(t+1)} = d\mathbf{A}\mathbf{r}_q^{(t)} + \frac{1-d}{|S(q)|}\mathbf{s}$$

Overall ObjectRank scores for given query q
(u is weighing parameter)

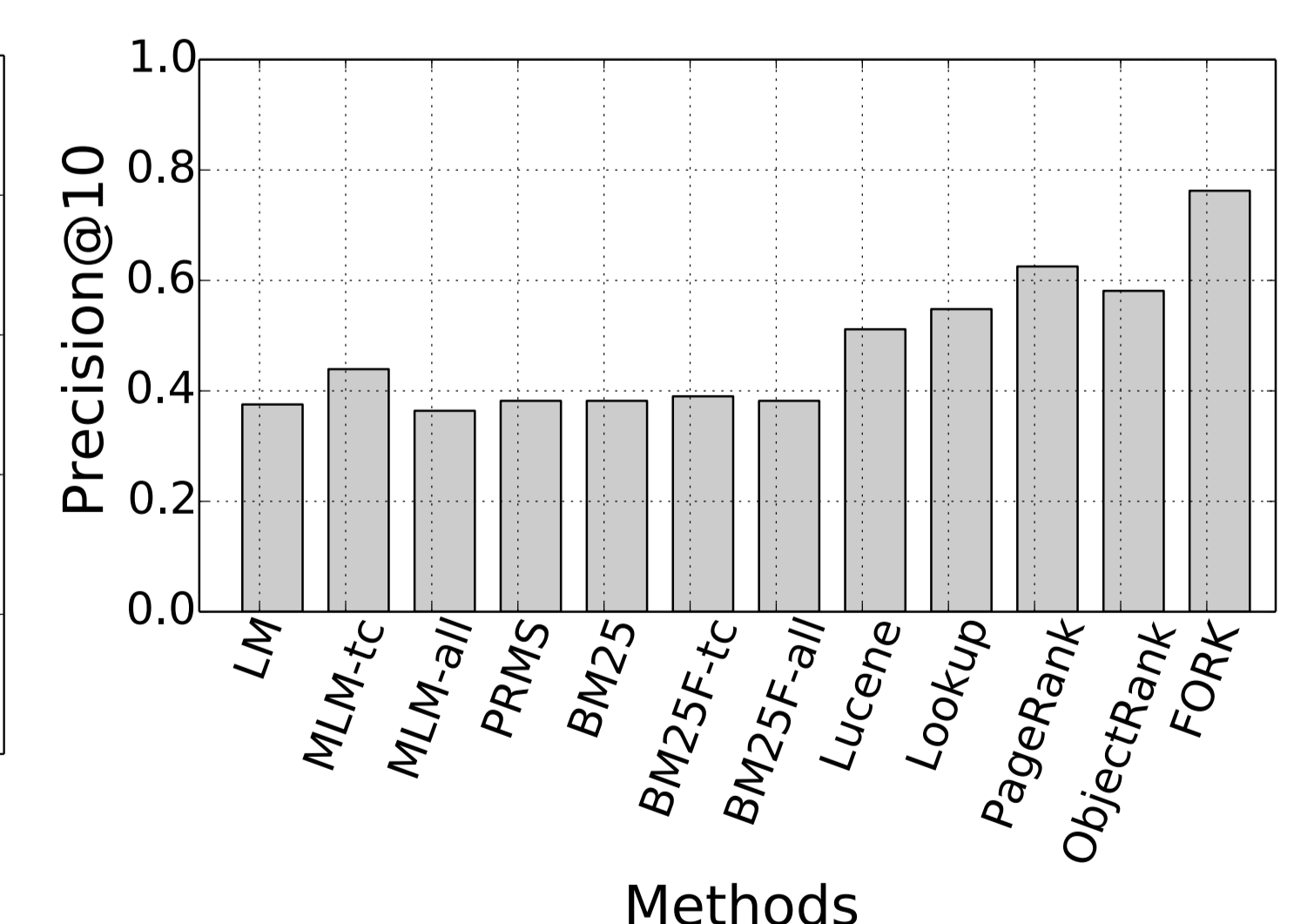
$$\mathbf{r} = \mathbf{r}_g \circ (\mathbf{r}_q)^u$$

Evaluation

- (a) FORK improves ranking.
- (b) Best-learnt ObjectRank is the best.



(a)



(b)

Dataset

- Data: DBpedia 3.9
- Entity search benchmark [6]

Measurement: Precision@10

[4] Balmin, A., Hristidis, V., Papakonstantinou, Y.: ObjectRank: Authority-Based Keyword Search in Databases. In: VLDB 2004. pp. 564–575 (2004)

[6] Balog, K., Neumayer, R.: A Test Collection for Entity Search in DBpedia. In: SIGIR 2013. pp. 737–740 (2013)