Linking FRBR Entities to Linked Open Data through Semantic Matching

Motivation

Vast amount of valuable (and thoroughly documented) metadata in library catalogs

Need for a transition to semantic formats

Transition requires a great deal of quality assurance

Many applications utilizing Linked Open Data

FRBRization

Input from the FRBRization Process
For each work, find the corresponding LOD entity

FRBR Work

Blocking

Set of LOD URLs

Entity matching

LOD Entity

Input from the FRBRization Process
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FRBR Work

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LOD Entity

DBPedia Lookup Engine as blocking process to reduce a set of DBpedia results as a set of candidates

684 FRBR works (extracted from product information found on Amazon), 343 with corresponding DBpedia entity

Eight human judges performed manual validation

Experiment results

A weight on the title which enables the promotion of recall (87%), i.e., allows us to discover more correct matches, but at the expense of precision

Type-based constraint filters out some candidates to promote precision (92%)

Most of the correct matches (189) are ranked at the top. At top-3, we only discover 12 more entities

<table>
<thead>
<tr>
<th>Top</th>
<th>TOP-1</th>
<th>TOP-2</th>
<th>TOP-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of True-Positives</td>
<td>189</td>
<td>197</td>
<td>201</td>
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Naimdjon Takhirov (takhirov@idi.ntnu.no)
Fabien Duchateau (fabien@idi.ntnu.no)
Trond Aalberg (trondaal@idi.ntnu.no)

FRBRpedia demo: http://j.mp/frbrpedia