ArtFinder: A Faceted Browser for Cross-Cultural Art Discovery

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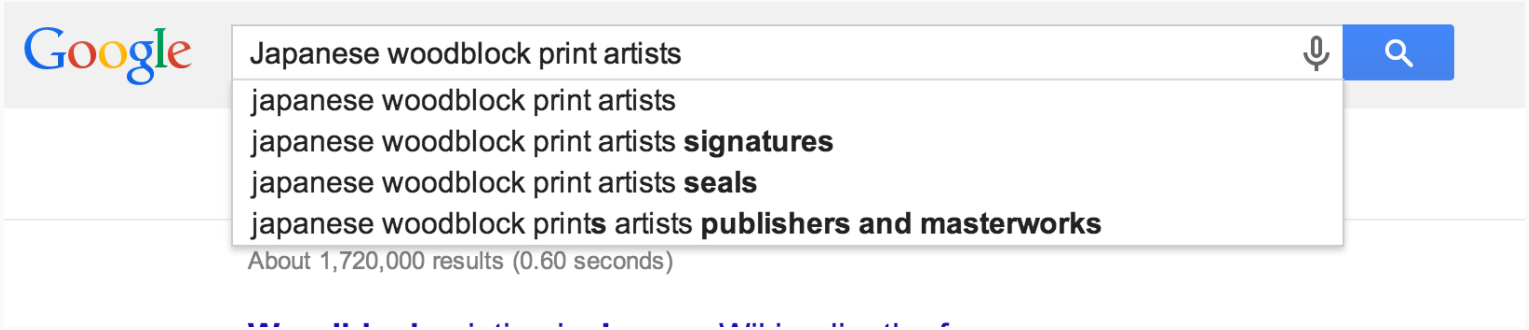
The problem

- How to explore art from another culture?
- Generally, you know what you like
- But what if the domain is totally unknown?

Possible solutions

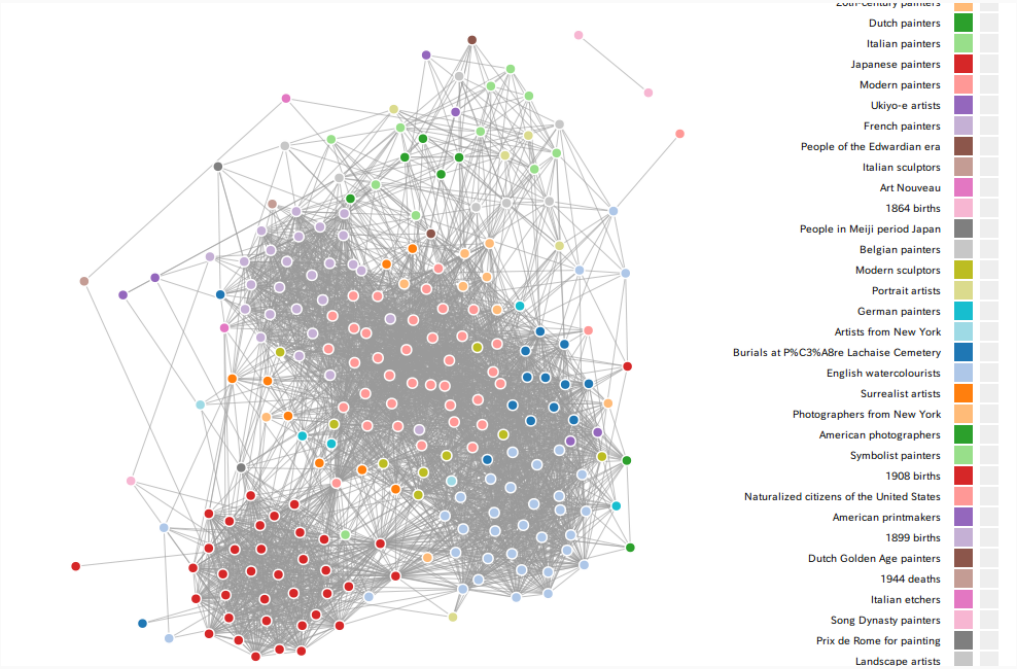
- Search
- Visualisation
- Categorisation and browsing

Search



- This is the standard approach
- What keywords would you use?
- What if the genres are words in a foreign language?

Visualisation



- We created ‘ArtViz’, a prototype visualisation
- Users can select genres of interest and ‘see’ similar artists
- Could be used for genres, eras, etc

Browsing the artists

- One problem: browsing artists from a *list* of tags is not ideal
- Ideally, the tags would be in some kind of hierarchical taxonomy
- How can we make this?

Faceted search

- First devised by Ranganathan [3] for library classification
- Sorts items into distinct, mutually exclusive facets
- Film example: ‘year’, ‘cast’, ‘genre’
- Many examples of faceted browsers, such as FLAMENCO browser for buildings [4]

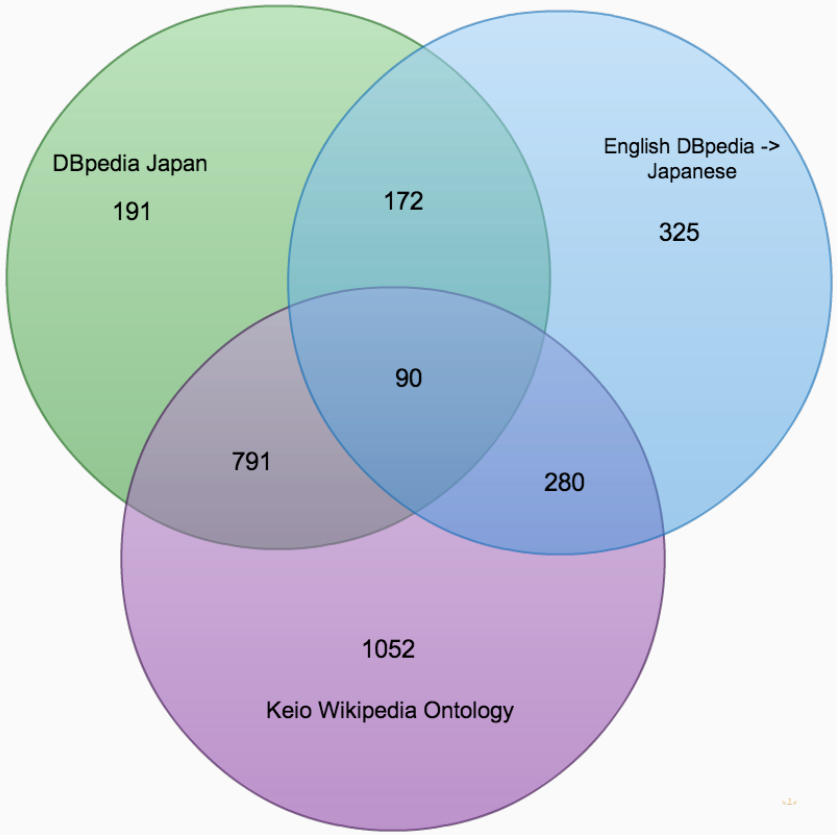
Facets

- Facets: *era, location, genre, media*
- Determined based on Ranganathan's [3] guidelines
- (Temporal, Spatial, Personal, Material)

Linked Open Data

- LODAC (`http://lod.ac`): Japanese Artists & Museums
- English DBpedia (Wikipedia articles)
- DBpedia Japan
- University of Keio's Japanese Wikipedia ontology

Datasets



- Cross-referenced LODAC with other ontologies
- Overlap (minus blanks/duplicates) of 893 usable artists

Extraction and translation of tags

- SPARQL queries sent to 893 artists
- Tags (genre, era, etc) taken from all ontologies
- Translated into English using Google Translate API

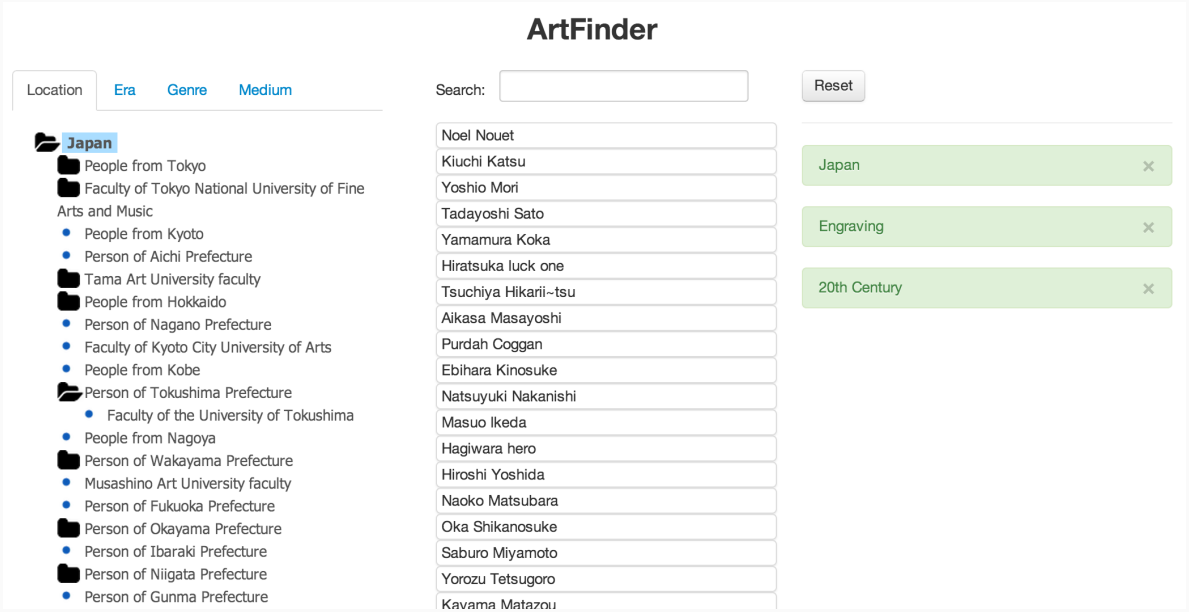
Hierarchy generation

$$P(x|y) = 1, P(y|x) < 1$$

$$D_x, D_y > 4$$

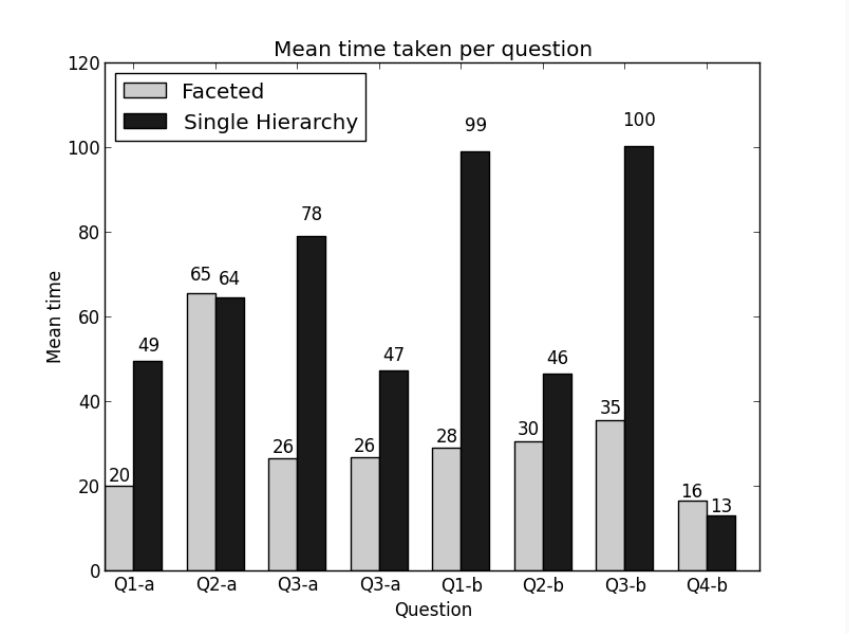
- Used Sanderson and Croft's subsumption approach [1]
- Relaxed from $P(x|y) = 1$ to $P(x|y) \geq 0.8$ to give better results
- Added D_x and D_y (number of documents in which tag occurs) from Schmitz et al [2]
- (Tag must appear > 4 times to be included in the hierarchy)

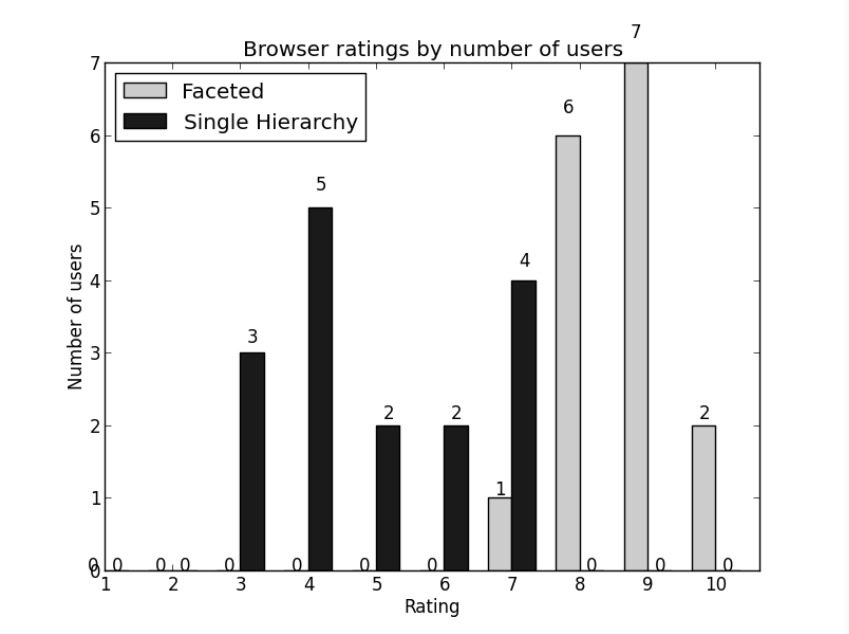
Browsing interface



- `http://is.gd/artfinder`
- Javascript, Angular.js, JSON
- Multiple tags can be selected from left

Preliminary user study





(a) Mean time taken for each interface, **(b)** Ratings for each interface, by user by question

- Faceted vs non-faceted browsers tested
- Given tasks to complete and timed

Conclusions, future work

Conclusions:

- Vast majority preferred faceted browser
- Faceted was preferred for both task completion and free exploration

Future work:

- Compare faceted browser with graph visualisation
- Genre/medium distinction unclear
- Tag names: France vs French. Fuzzy search?
- Automatically determine facets

References

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