

ArtFinder: A Faceted Browser for Cross-Cultural Art Discovery

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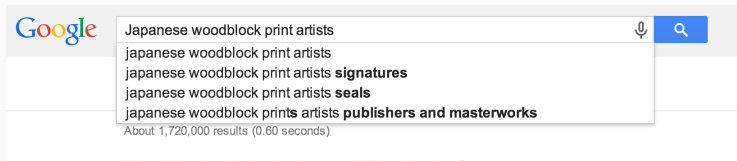
The problem

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

Possible solutions

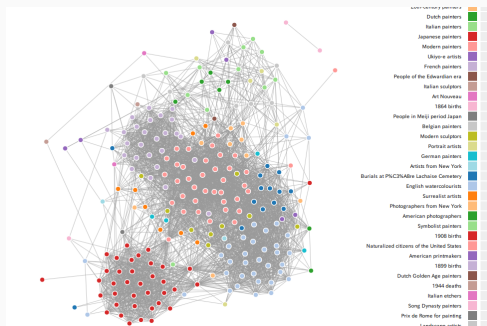
- Search
- Visualisation
- Categorisation and browsing

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]

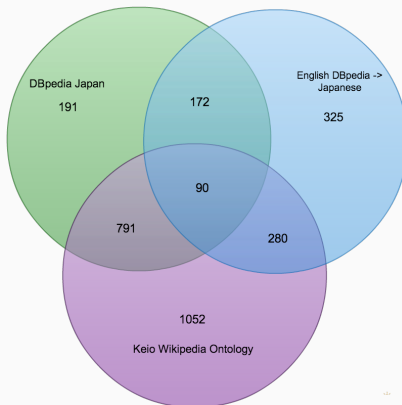
Facets

- 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

ArtFinder

Location

Era

Genre

Medium

Japan

People from Tokyo

Faculty of Tokyo National University of Fine Arts and Music

People from Kyoto

Person of Aichi Prefecture

Tama Art University faculty

People from Hokkaido

Person of Nagano Prefecture

Faculty of Kyoto City University of Arts

People from Kobe

Person of Tokushima Prefecture

Faculty of the University of Tokushima

People from Nagoya

Person of Wakayama Prefecture

Musashino Art University faculty

Person of Fukuoka Prefecture

Person of Okayama Prefecture

Person of Ibaraki Prefecture

Person of Niigata Prefecture

Person of Gunma Prefecture

Search:

Noel Nouet

Kiuchi Katsu

Yoshio Mori

Tadayoshi Seto

Yamamura Koka

Hiratsuka Iuck one

Tsuchiya Hikari-Iso

Alkasa Masayoshi

Purdish Coggan

Ebihara Kinoshige

Natsuyuki Nakanishi

Masuo Ikeda

Hagiwara hero

Hiroshi Yoshida

Naoko Matsubara

Oka Shikanosuke

Saburo Miyamoto

Yorozu Tetsugoro

Kawama Matsuzo

Reset

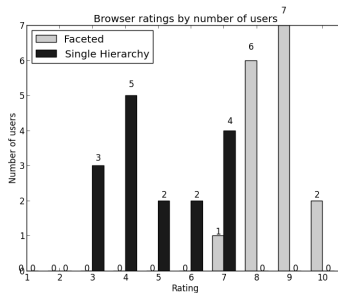
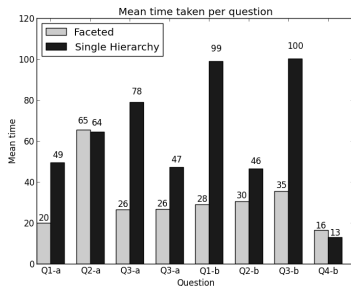
Japan

Engraving

20th Century

- <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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