Vers l'analyse à la demande des connaissances de Wikidata

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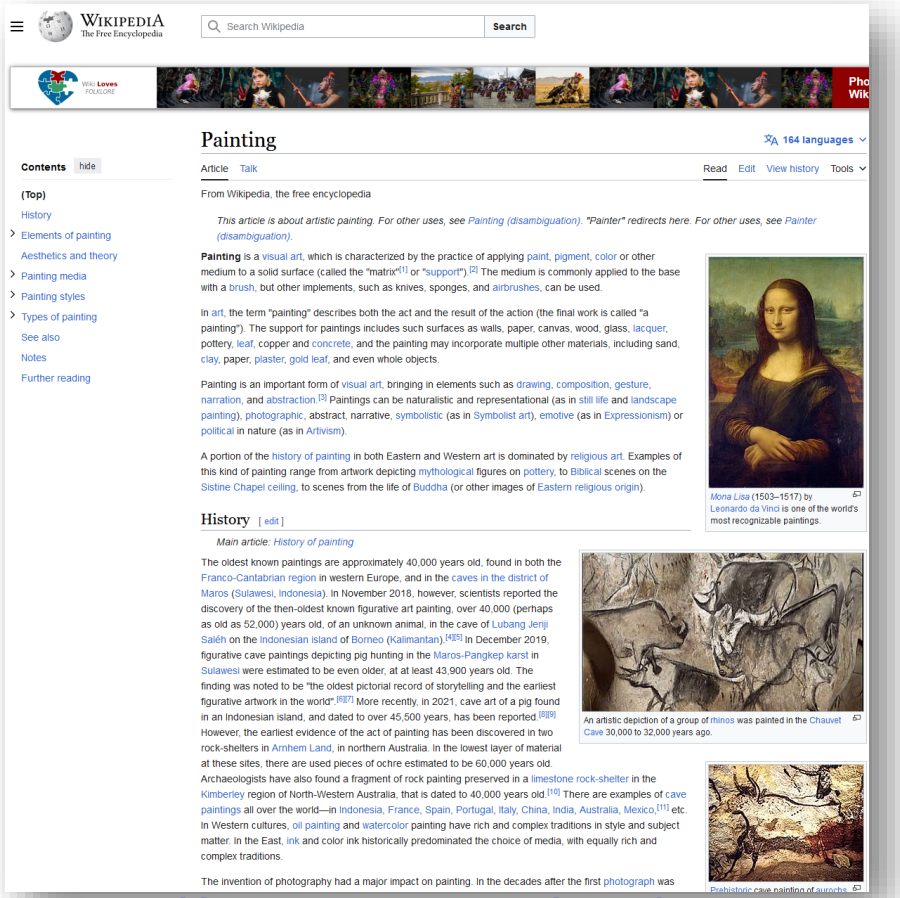
Université de Tours, LIFAT, Blois

université de TOURS

LIFAT EA 6300

Journée Intelligence Artificielle
Et Humanités Numériques

From Wikipedia to…



Wikipedia
The Free Encyclopedia

Search Wikipedia | Search

Painting

164 languages

Article | Talk | Read | Edit | View history | Tools

Contents hide

(Top)
History
Elements of painting
Aesthetics and theory
Painting media
Painting styles
Types of painting
See also
Notes
Further reading

From Wikipedia, the free encyclopedia

This article is about artistic painting. For other uses, see Painting (disambiguation). "Painter" redirects here. For other uses, see Painter (disambiguation).

Painting is a visual art, which is characterized by the practice of applying paint, pigment, color or other medium to a solid surface (called the "matrix"[1] or "support").[2] The medium is commonly applied to the base with a brush, but other implements, such as knives, sponges, and airbrushes, can be used.

In art, the term "painting" describes both the act and the result of the action (the final work is called "a painting"). The support for paintings includes such surfaces as walls, paper, canvas, wood, glass, lacquer, pottery, leaf, copper and concrete, and the painting may incorporate multiple other materials, including sand, clay, paper, plaster, gold leaf, and even whole objects.

Painting is an important form of visual art, bringing in elements such as drawing, composition, gesture, narration, and abstraction.[3] Paintings can be naturalistic and representational (as in still life and landscape painting), photographic, abstract, narrative, symbolistic (as in Symbolist art), emotive (as in Expressionism) or political in nature (as in Artivism).

A portion of the history of painting in both Eastern and Western art is dominated by religious art. Examples of this kind of painting range from artwork depicting mythological figures on pottery, to Biblical scenes on the Sistine Chapel ceiling, to scenes from the life of Buddha (or other images of Eastern religious origin).

Mona Lisa (1503–1517) by Leonardo da Vinci is one of the world's most recognizable paintings.

History [edit]

Main article: History of painting

The oldest known paintings are approximately 40,000 years old, found in both the Franco-Cantabrian region in western Europe, and in the caves in the district of Maros (Sulawesi, Indonesia). In November 2018, however, scientists reported the discovery of the then-oldest known figurative art painting, over 40,000 (perhaps as old as 52,000) years old, of an unknown animal, in the cave of Lubang Jeriji Saléh on the Indonesian island of Borneo (Kalimantan).[4][5] In December 2019, figurative cave paintings depicting pig hunting in the Maros-Pangkep karst in Sulawesi were estimated to be even older, at at least 43,900 years old. The finding was noted to be "the oldest pictorial record of storytelling and the earliest figurative artwork in the world".[6][7] More recently, in 2021, cave art of a pig found in an Indonesian island, and dated to over 45,500 years, has been reported.[8][9] However, the earliest evidence of the act of painting has been discovered in two rock-shelters in Arnhem Land, in northern Australia. In the lowest layer of material at these sites, there are used pieces of ochre estimated to be 60,000 years old. Archaeologists have also found a fragment of rock painting preserved in a limestone rock-shelter in the Kimberley region of North-Western Australia, that is dated to 40,000 years old.[10] There are examples of cave paintings all over the world—in Indonesia, France, Spain, Portugal, Italy, China, India, Australia, Mexico,[11] etc. In Western cultures, oil painting and watercolor painting have rich and complex traditions in style and subject matter. In the East, ink and color ink historically predominated the choice of media, with equally rich and complex traditions.

An artistic depiction of a group of rhinos was painted in the Chauvet Cave 30,000 to 32,000 years ago.

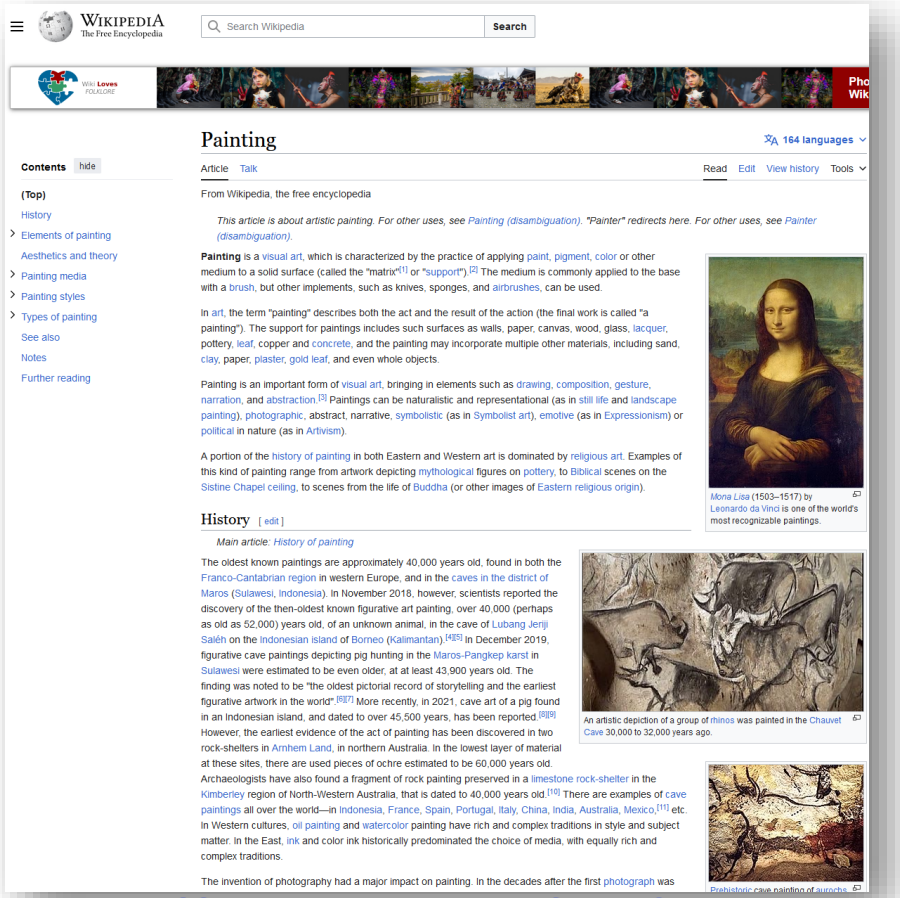
Prehistoric cave painting of aurochs

The invention of photography had a major impact on painting. In the decades after the first photograph was

https://en.wikipedia.org/wiki/Painting

- Is painting as important an art as literature?
- Who is the most famous woman painter?
- What are the most popular painting techniques?

From Wikipedia to…



https://en.wikipedia.org/wiki/Painting

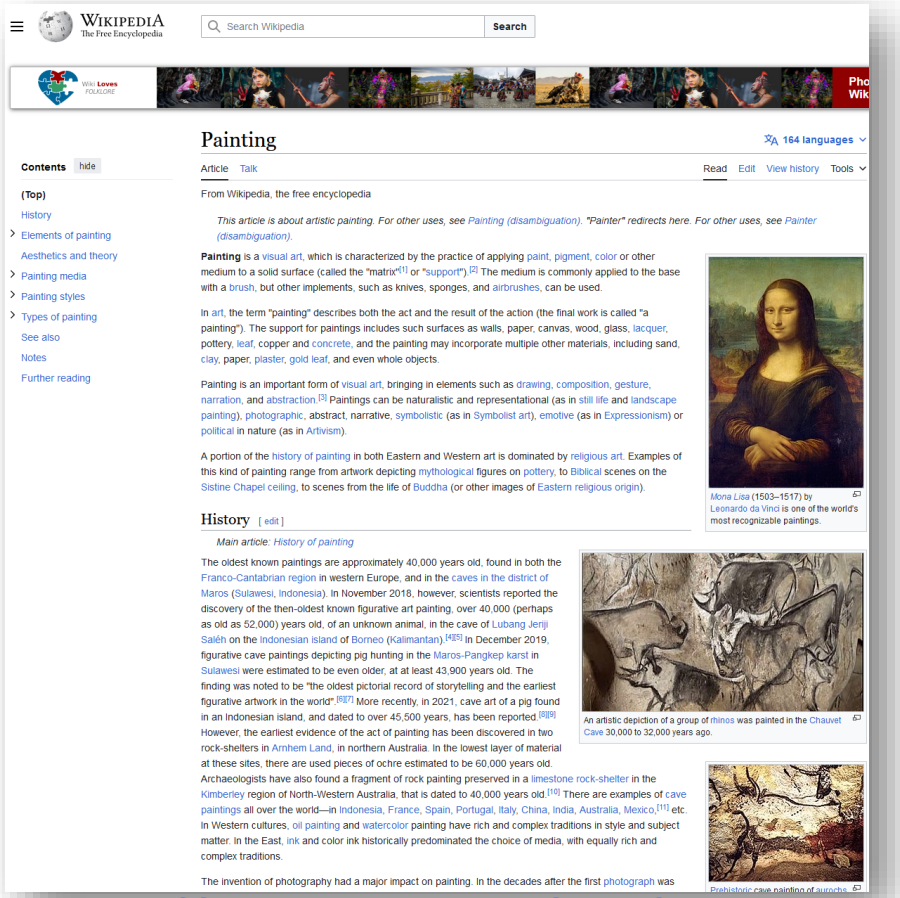
- **Content limitations**
  - No comparison with other types of art
  - No information about famous painters
- **Editorial limitations**
  - No quantitative analysis
  - No generic template

Design an analytical tool of the Web of Data for knowledge workers

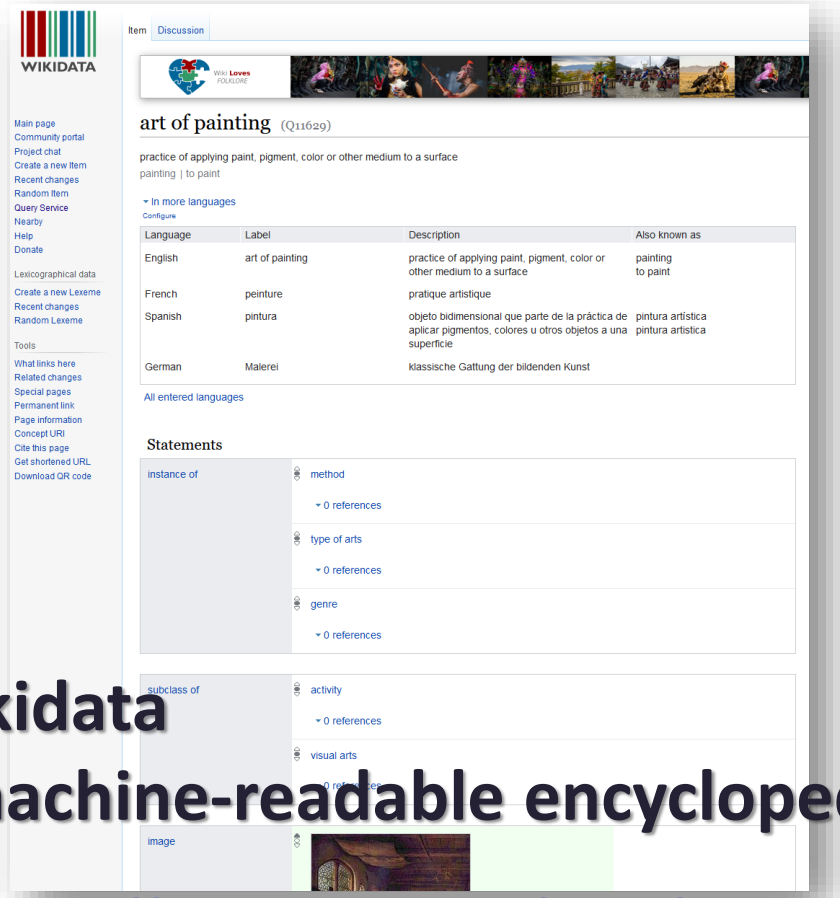
Ferré, S. Analytical Queries on Vanilla RDF Graphs with a Guided Query Builder Approach. In *FQAS 2021*.
Weikum, G. Knowledge graphs 2021: A data odyssey. In VLDB 2021.
Lissandrini, M. & al. Knowledge graph exploration systems: are we lost. In CIDR 2022.

From Wikipedia to Wikidata

Vrandečić, D., & Krötzsch, M. (2014). Wikidata: a free collaborative knowledgebase. CACM.



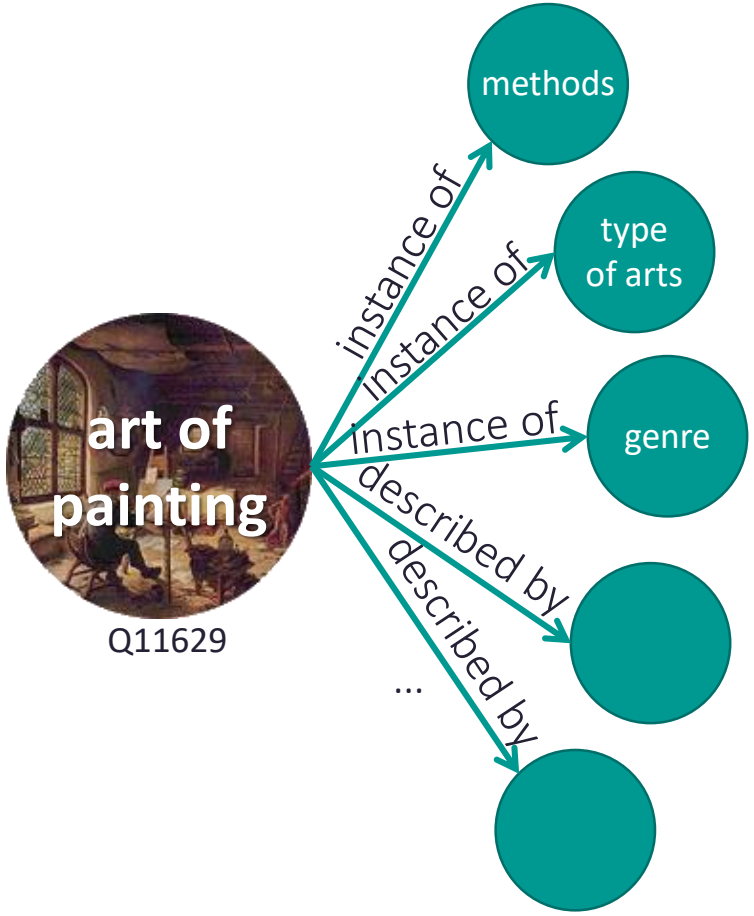
https://en.wikipedia.org/wiki/Painting



<http://www.wikidata.org/entity/Q11629>

Wikidata
= machine-readable encyclopedia

Wikidata: a crowdsourced knowledge graph

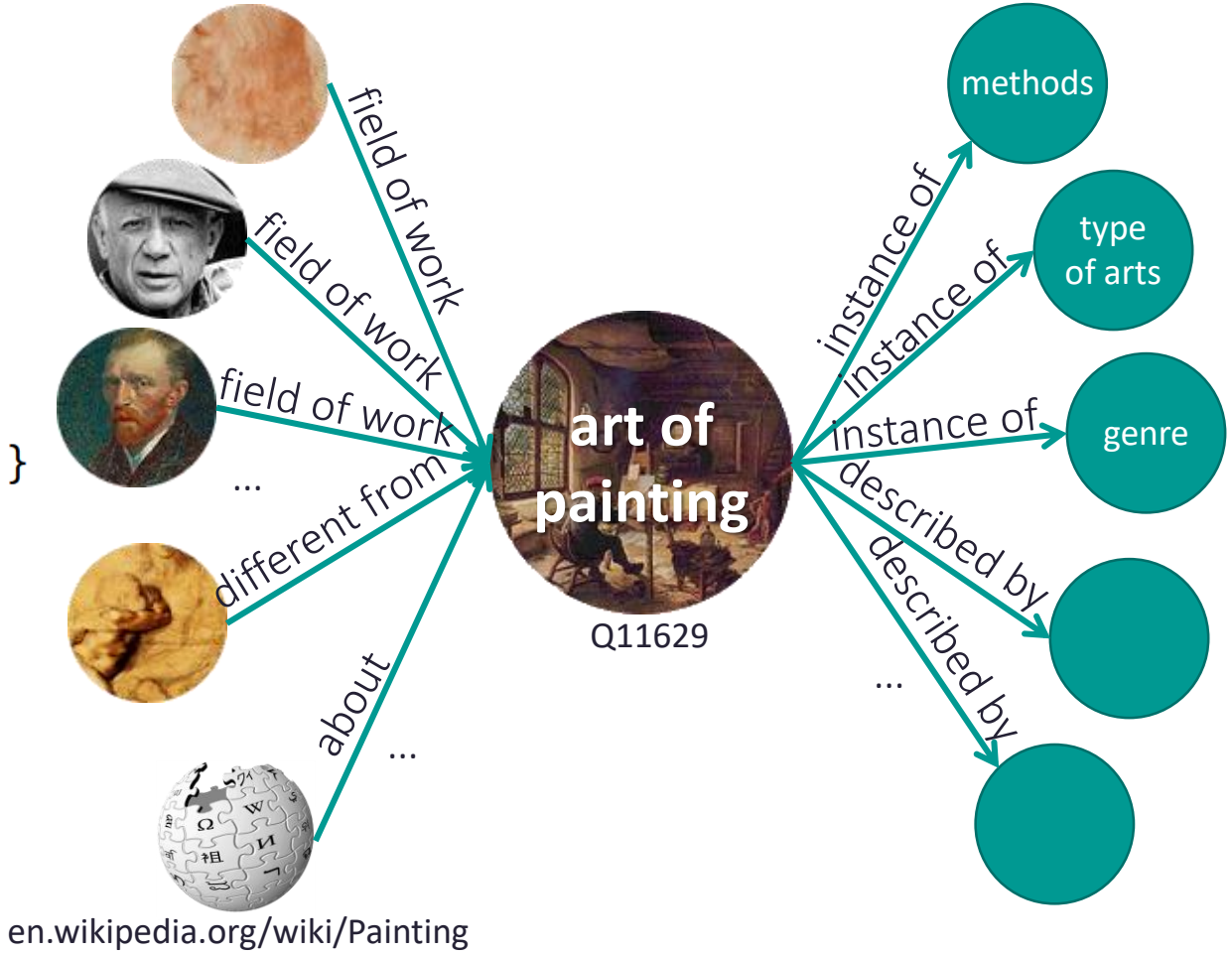


SPARQL language for querying Wikidata:

```
SELECT *
WHERE { wd:Q11629 ?p ?o. }
```

Wikidata: a crowdsourced knowledge graph

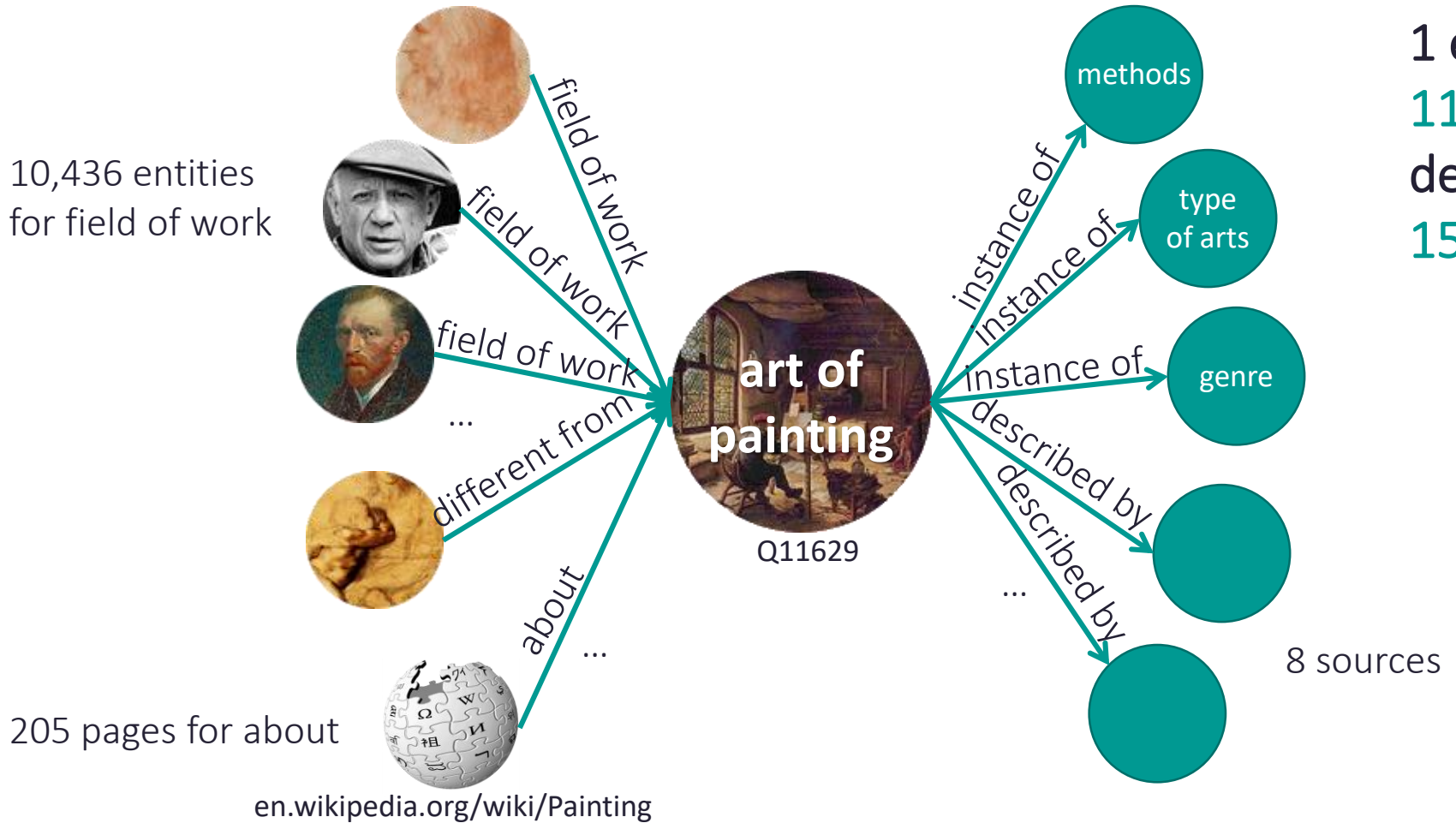
```
SELECT *
WHERE { ?s ?p wd:Q11629. }
```



en.wikipedia.org/wiki/Painting

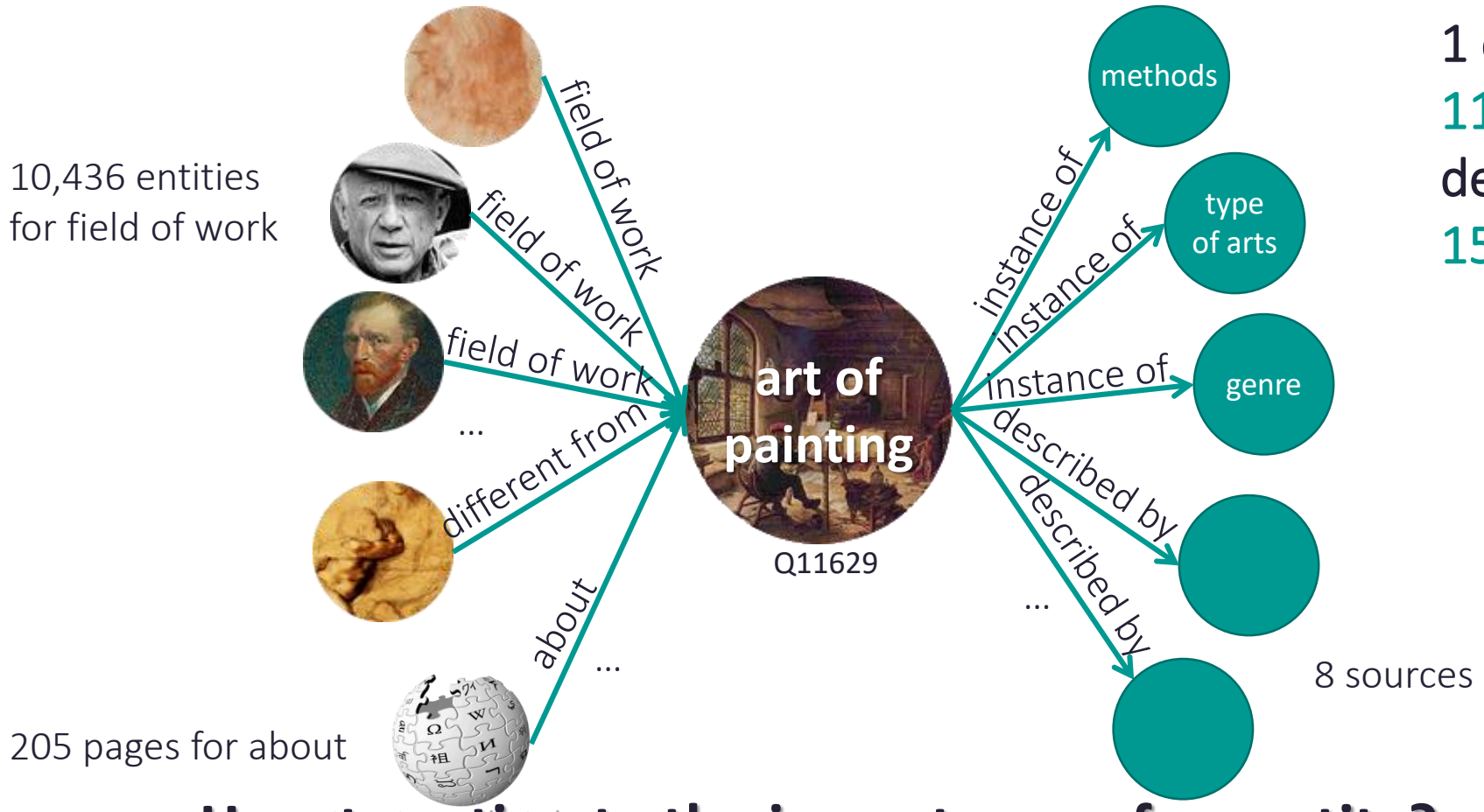
```
SELECT *
WHERE { wd:Q11629 ?p ?o. }
```

Wikidata: a crowdsourced knowledge graph



1 entity among
110 million entities
described by
15.7 billion facts

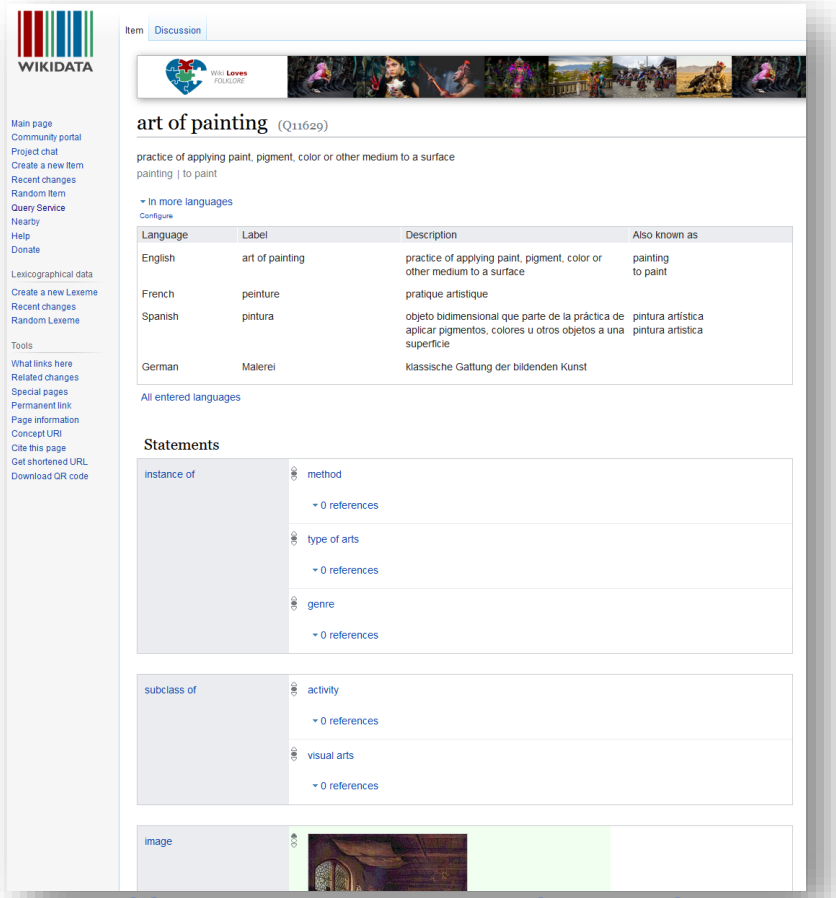
Wikidata: a crowdsourced knowledge graph



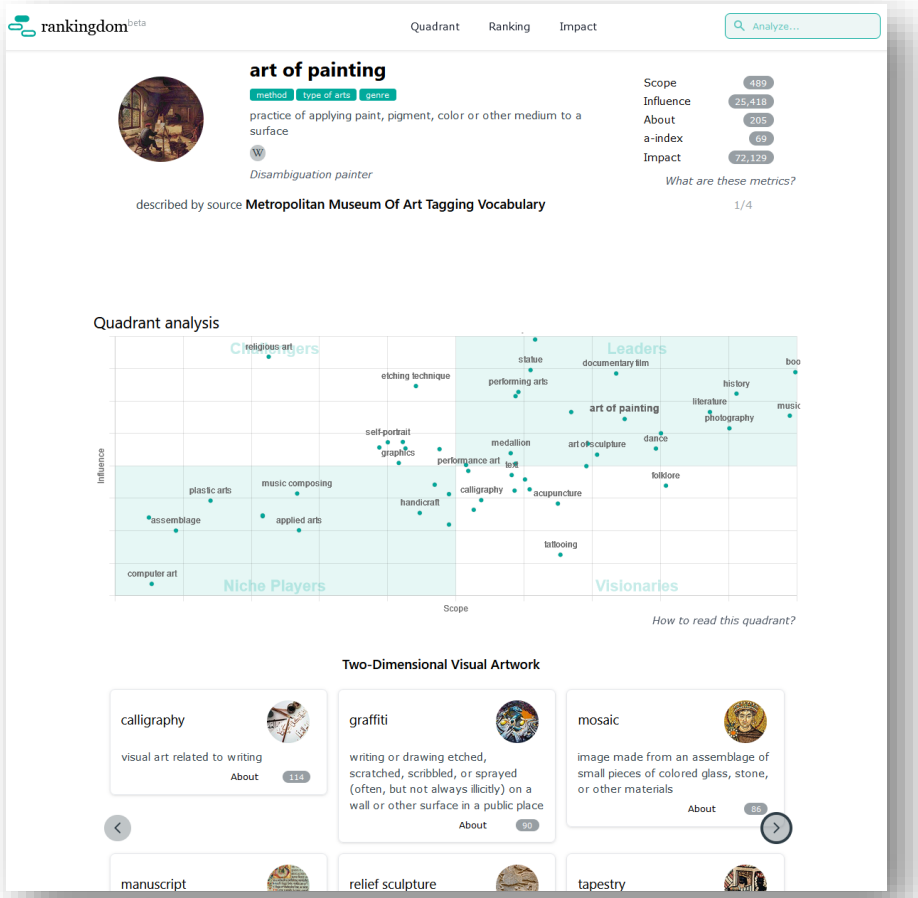
1 entity among
110 million entities
described by
15.7 billion facts

How to estimate the importance of an entity?

From Wikidata to Rankingdom



<http://www.wikidata.org/entity/Q11629>



https://www.rankingdom.org/entity/Q11629

places

rankingdom beta — Quadrant — Ranking

Blois

commune of France | city

French commune and city in Loir-et-Cher, Centre-Val de

Disambiguation blois

capital of **County Of Blois**

historical province in the Kingdom of France

Quadrant analysis

Challengers

organizations

rankingdom beta — Quadrant — Ranking — Impact — Analyze...

Tours University

university in France

French university located in Tours, France. Founded in 1971.

Disambiguation university of tours

instance of **University In France**

public university in France

Scope 251

Influe

Abou

a-ind

Impa

Quadrant analysis

Challengers

Leaders

occupations

rankingdom beta — Quadrant — Ranking — Impact — Analyze...

computer scientist

profession

one who studies or practises computer science

Disambiguation computer scientist

Scope 380
Influence 43,435
About 35
a-index 56
Impact 43,876

What are these metrics?

industry **Service Sector**

third of the three economic sectors of the three-sector theory

Quadrant analysis

Challengers

Leaders

sport cyclist

television actor

people

rankingdom beta — Quadrant — Ra

Jean Jaurès

human | journalist | writer | reporter | politician | h

French / Occitan Socialist leader (1859-1914)

Disambiguation jean jaurès

described by source **New International Encyclopedia**

American encyclopedia first published in 1902

Quadrant analysis

Challengers

Influence

Scope

Jules Gue

Marcel Sembat

Anne de Noailles

Paul Lev

Mathilde Jacob

Kostja Zetkin

Louis Jaurès

Ernest Tarbouriech

Jean Bleuzen

Niche Players

Independent Social Democratic Party Of Germ

concepts

rankingdom beta — Quadrant — Ranking — Impact — Analyze...

knowledge

philosophical concept | mental state

mental possession of information or skills, contributing to understanding

Disambiguation knowledge

Scope 451
Influence 882
About 176
a-index 28
Impact 3,087

What are these met

union of **List Of Values As Qualifiers**

dummy value for "union of" P2737 and "disjoint union of" P2738 to specify the list of items this class can. Use "list item" P11260 as a qualifier to specify the items.

2/3

Quadrant analysis

Challengers

Leaders

Influence

Scope

project

occupation

culture

service

product

power

condition

knowledge

discovery

faith

literacy

infinity

area of law

good

world view

indigenous

emergence

governmentality

conviction

inner peace

knowledge

Verstehen

phenomenon

Niche Players

Visionaries

How to read this quadr

Philosophical Concept

objects

rankingdom beta — Quadrant — Ranking — Impact — Analyze...

chair

piece of furniture for sitting on

Disambiguation chair

Scope 398
Influence 5,626
About 147
a-index 19
Impact 2,100

What are these metrics?

has characteristic **Height**

distance between the lowest end and highest end of an object

3/5

Quadrant analysis

Challengers

Leaders

brick

wall

chair

plate

column

ring

hat

door

window

carpet

toy

spoon

couch

wig

watch

pillow

hourglass

typewriter

Scope

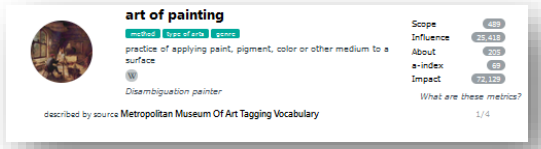
How to read this quadrant?

Furniture

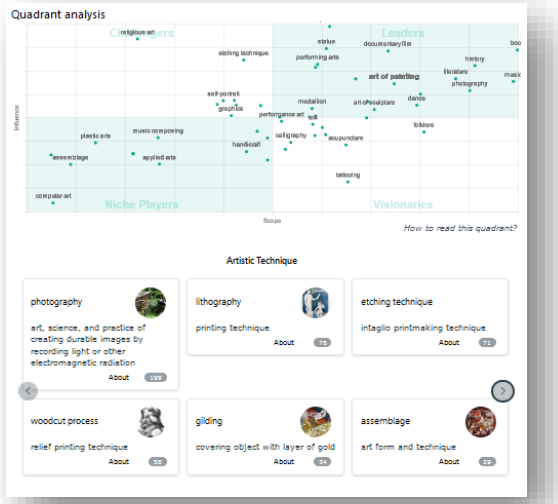
...and more with 110 million searchable entities

How to deal with such heterogeneous entities?

Overview

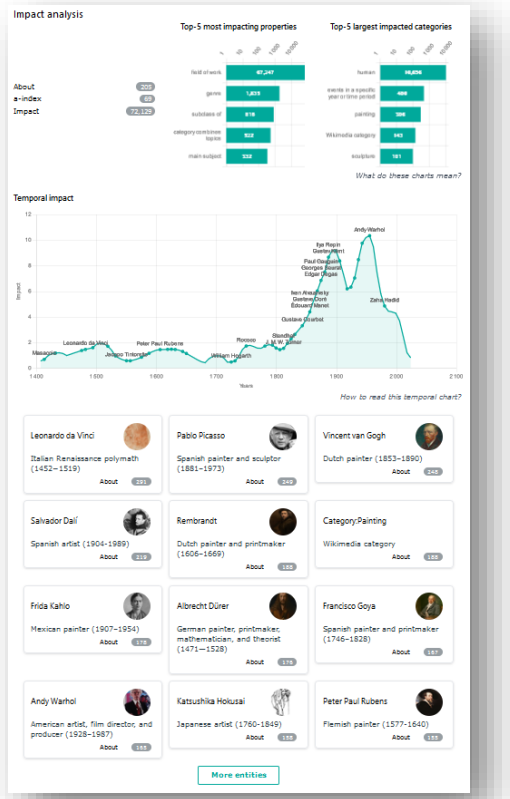


Summary



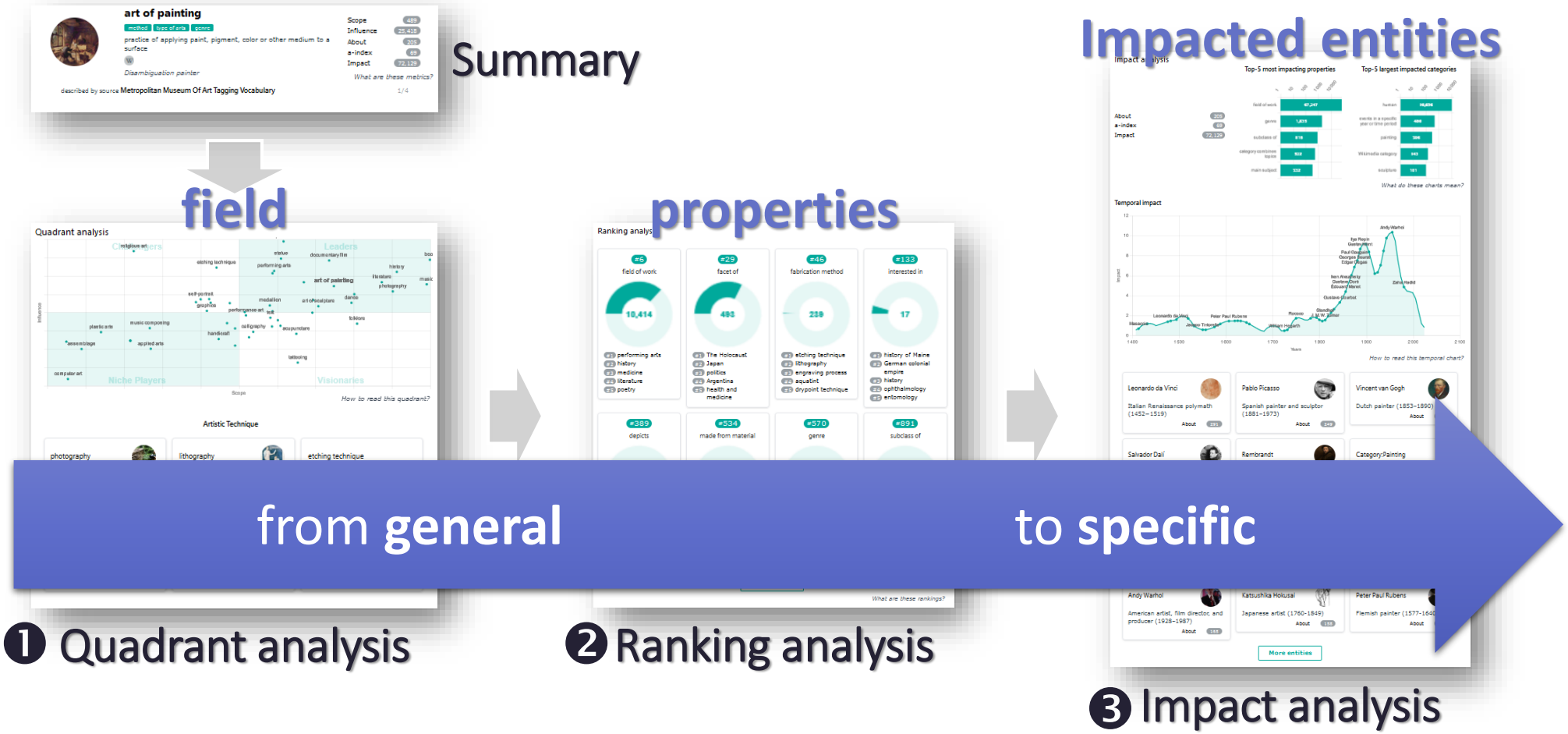
❶ Quadrant analysis

❷ Ranking analysis



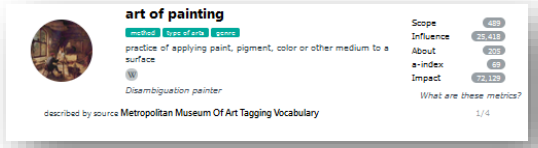
❸ Impact analysis

Overview: data narrative



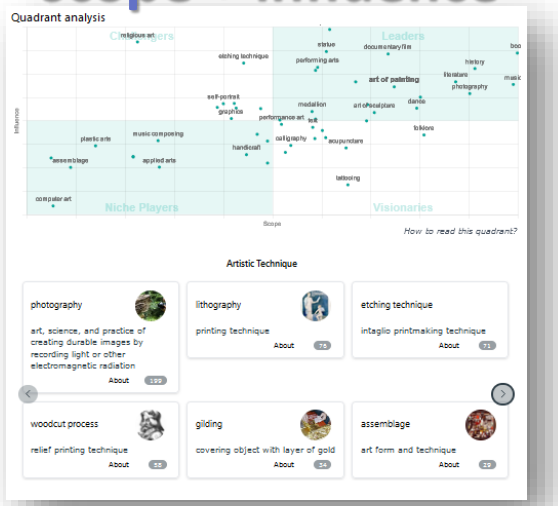
Marcel, P., Peralta, V., & Amer-Yahia, S. (2023). Data Narration for the People: Challenges and Opportunities.

Overview: measure



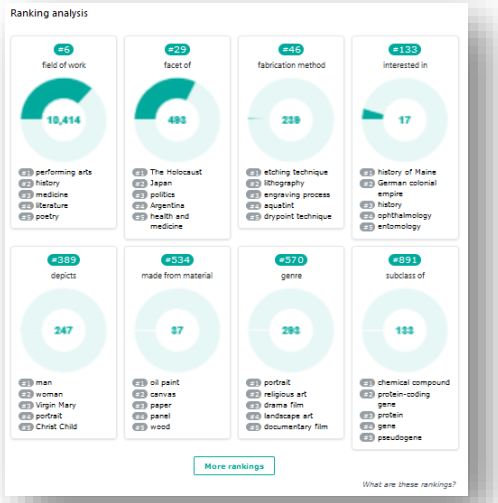
Summary

scope + influence



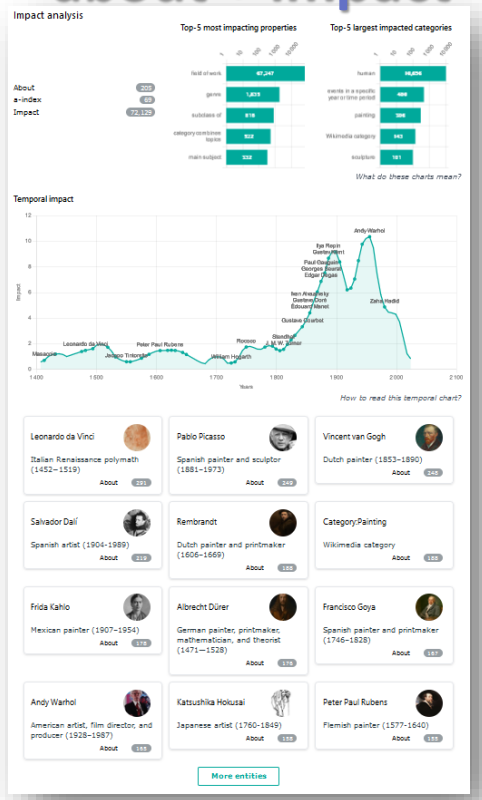
❶ Quadrant analysis

semantic scores



❷ Ranking analysis

about + impact

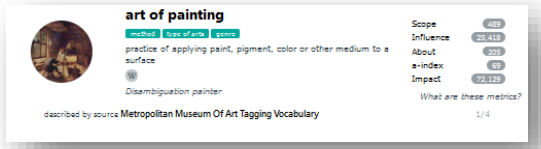


a-index

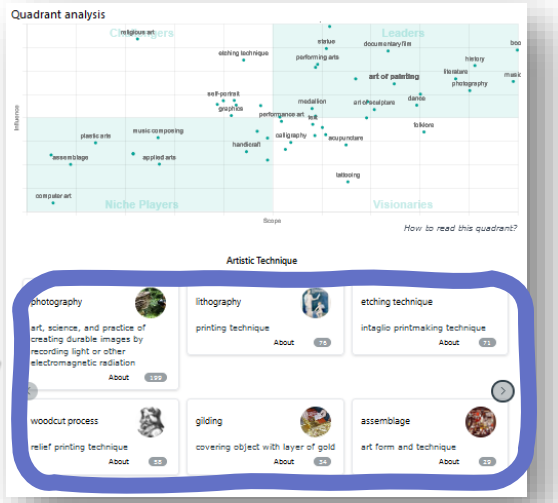
❸ Impact analysis

Nacke, O. (1979). "Informetrie: eine neuer Name für eine neue Disziplin". Nachrichten für Dokumentation. 30 (6): 219–226.

Overview: order



Summary

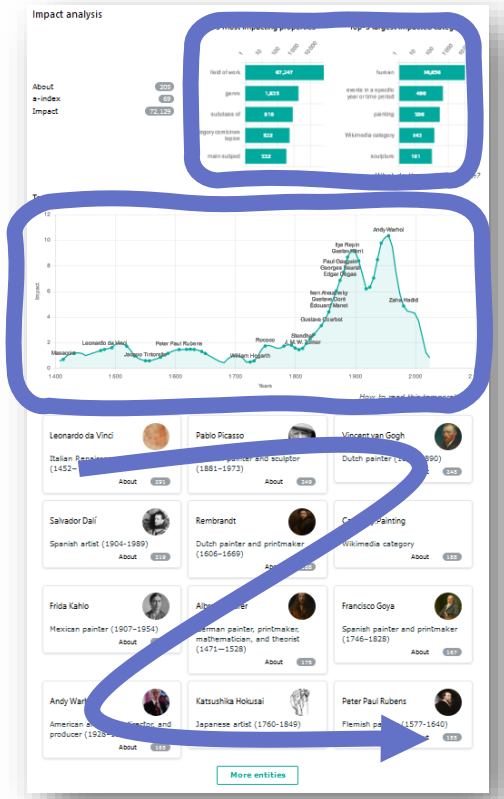


by category

❶ Quadrant analysis

by rank

❷ Ranking analysis



by property

by time

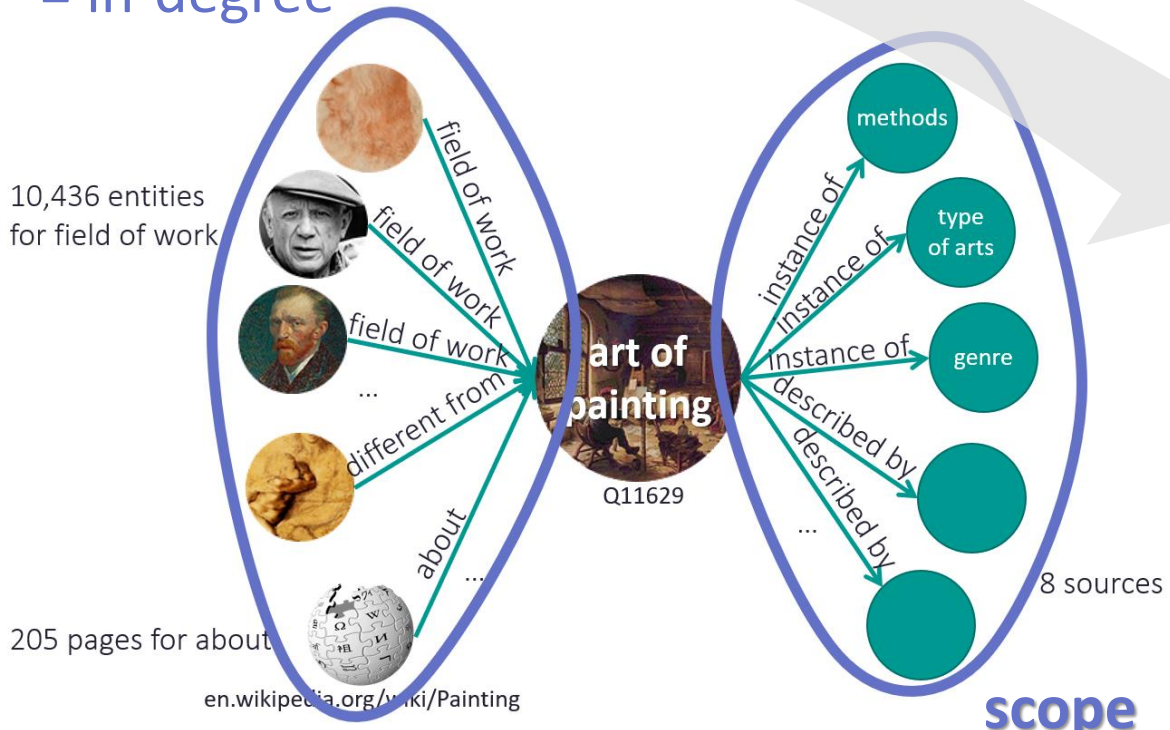
by about

❸ Impact analysis

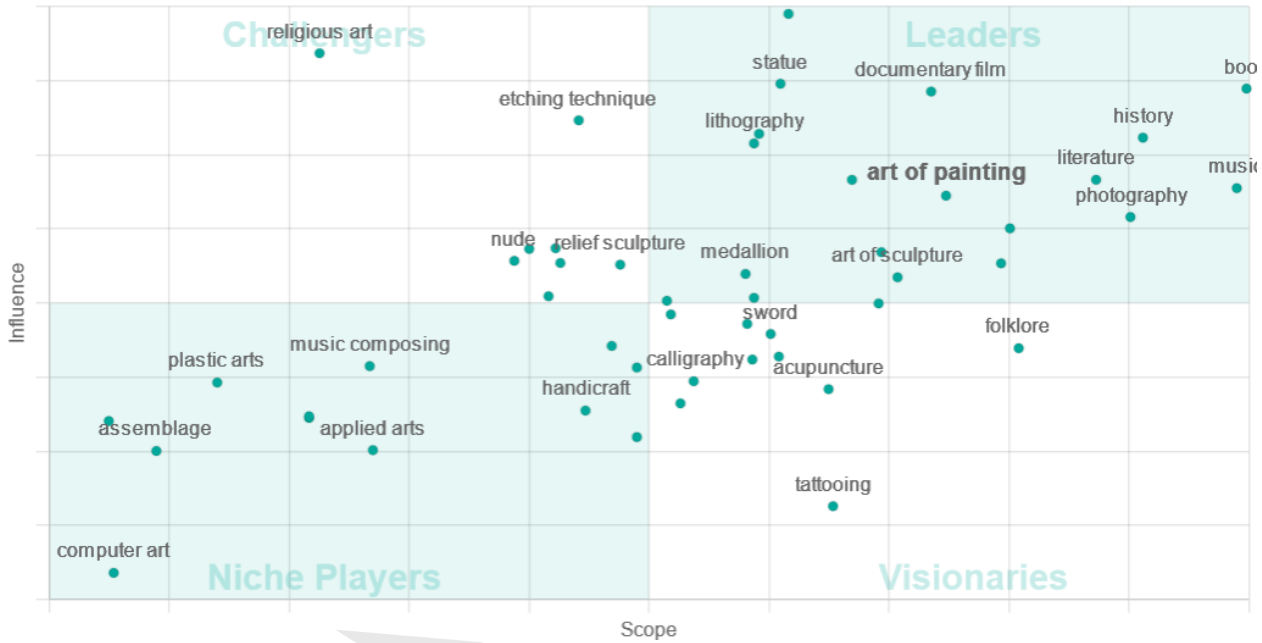
Nacke, O. (1979). "Informetrie: eine neuer Name für eine neue Disziplin". Nachrichten für Dokumentation. 30 (6): 219–226.

❶ Quadrant analysis

influence
= in-degree



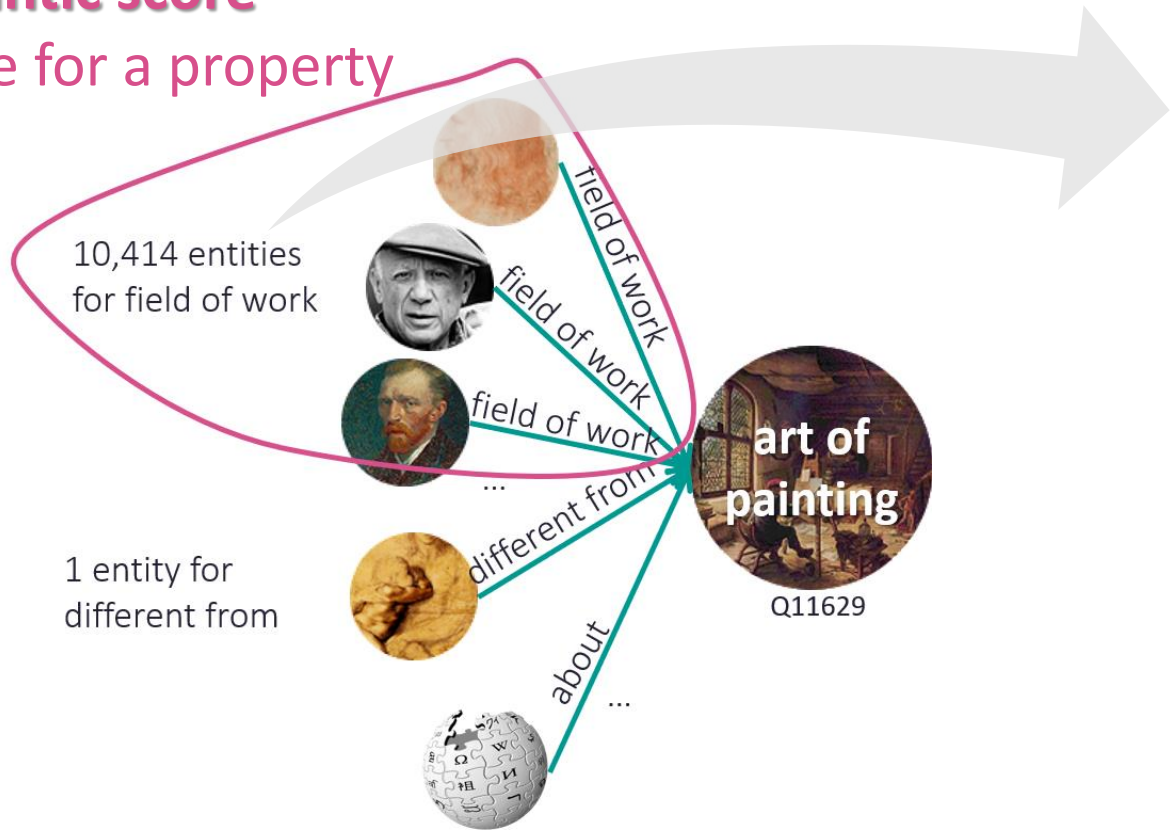
Comparison with similar entities :

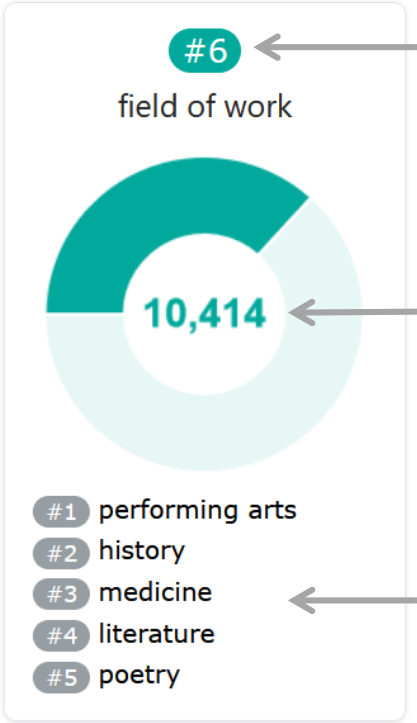


scope
= out-degree

❷ Ranking analysis

semantic score
= in-degree for a property





Ranking of the entity
for this property

Number of impacted entities
for this property

Top-5 entities
for this property

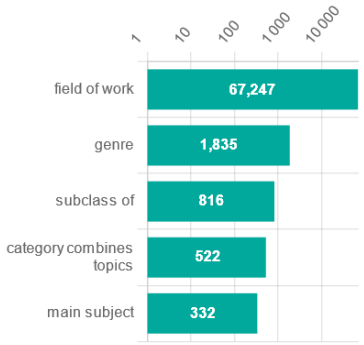
Good ranking = inequal distribution of facts

Thèse de Hassan Abdallah

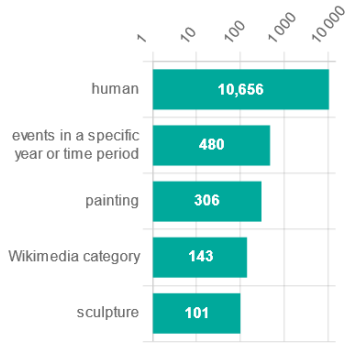
❸ Impact analysis

Categorical analysis

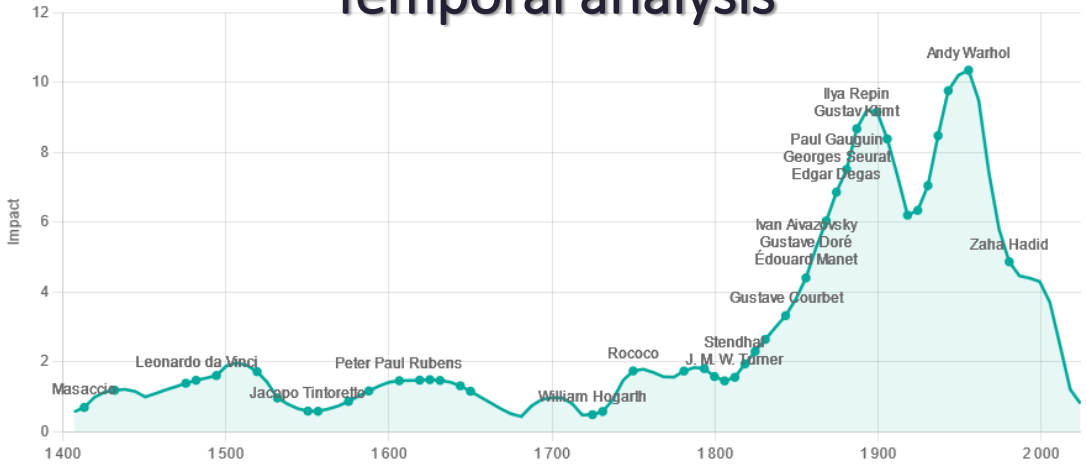
Top-5 most impacting properties



Top-5 largest impacted categories



Temporal analysis



Impacted entities

Leonardo da Vinci

Italian Renaissance polymath (1452–1519)

About 291

Pablo Picasso

Spanish painter and sculptor (1881–1973)

About 249

Vincent van Gogh

Dutch painter (1853–1890)

About 248

Salvador Dalí

Spanish artist (1904-1989)

About 219

Rembrandt

Dutch painter and printmaker (1606–1669)

About 188

Category:Painting

Wikimedia category

About 188

Frida Kahlo

Mexican painter (1907–1954)

About 178

Albrecht Dürer

German painter, printmaker, mathematician, and theorist (1471—1528)

About 176

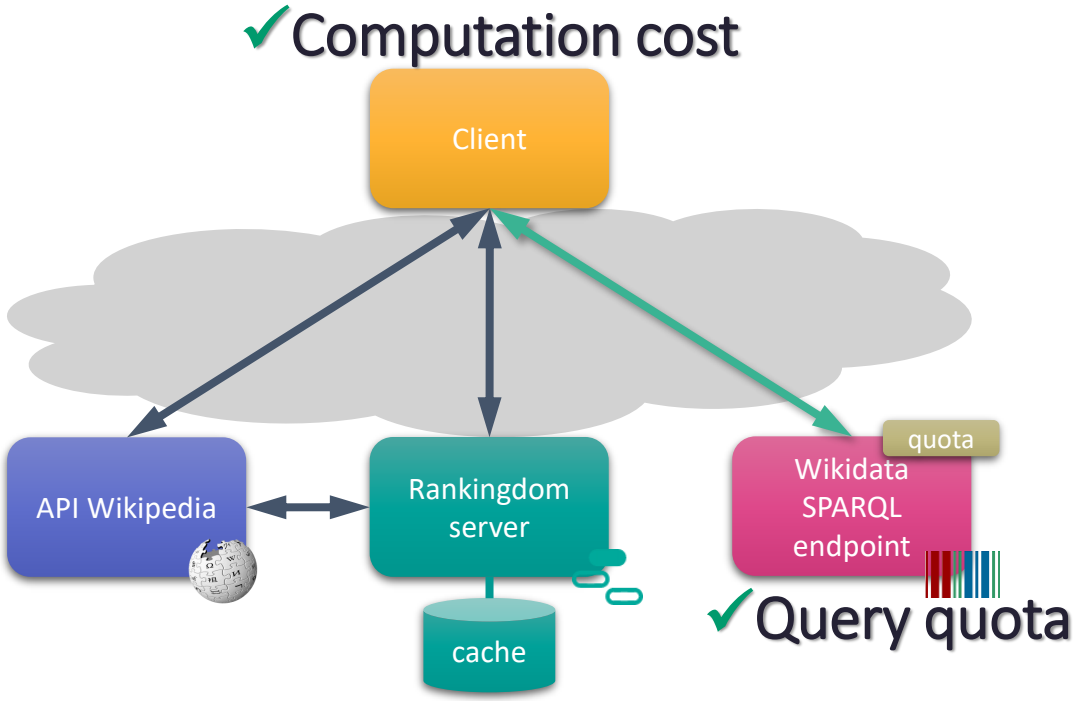
Francisco Goya

Spanish painter and printmaker (1746–1828)

About 167

On-demand computation

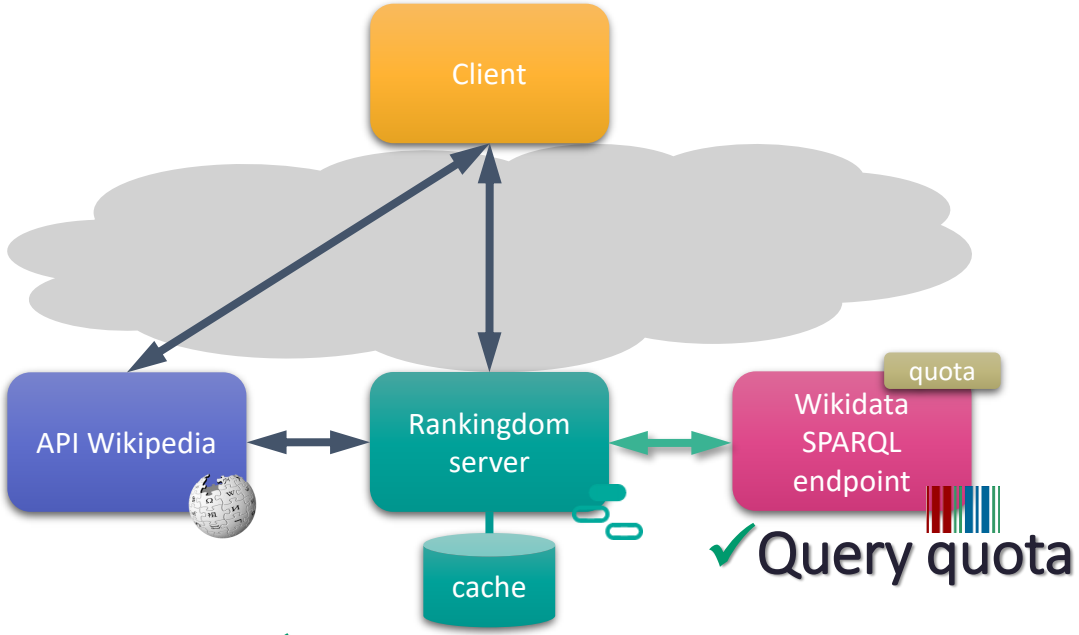
1. Entity search
2. Cache retrieval
3. **On-demand computation**
4. Image downloading
5. Cache storing



Soulet, A., & Suchanek, F. M. Anytime large-scale analytics of linked open data. In ISWC 2019.

Cooperative architecture for scalability

Centralized computation

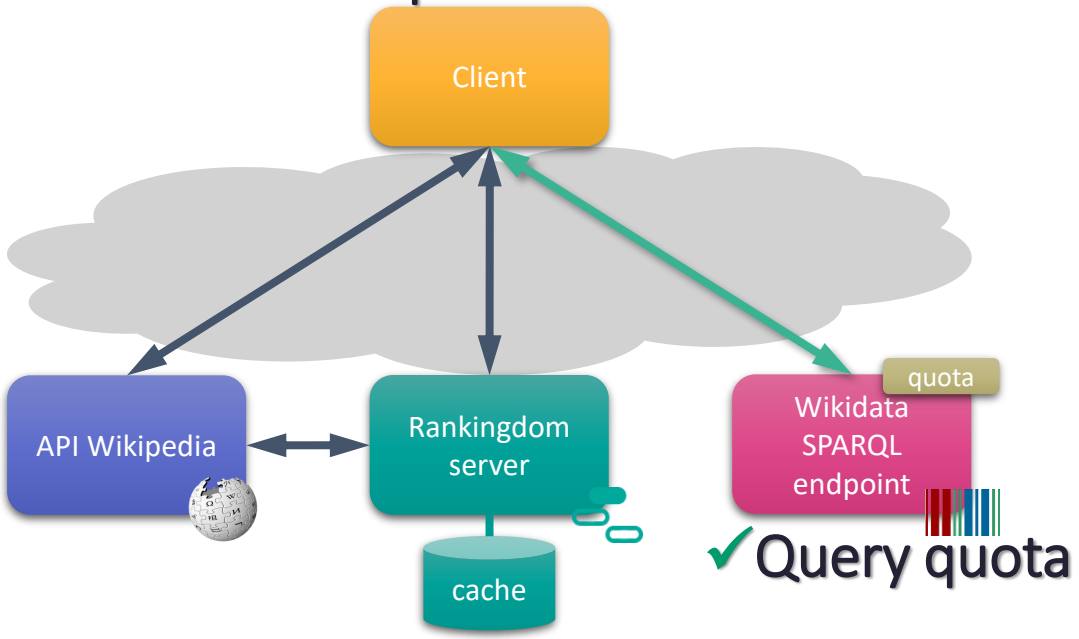


✓Query quota

✓Computation cost

Decentralized computation

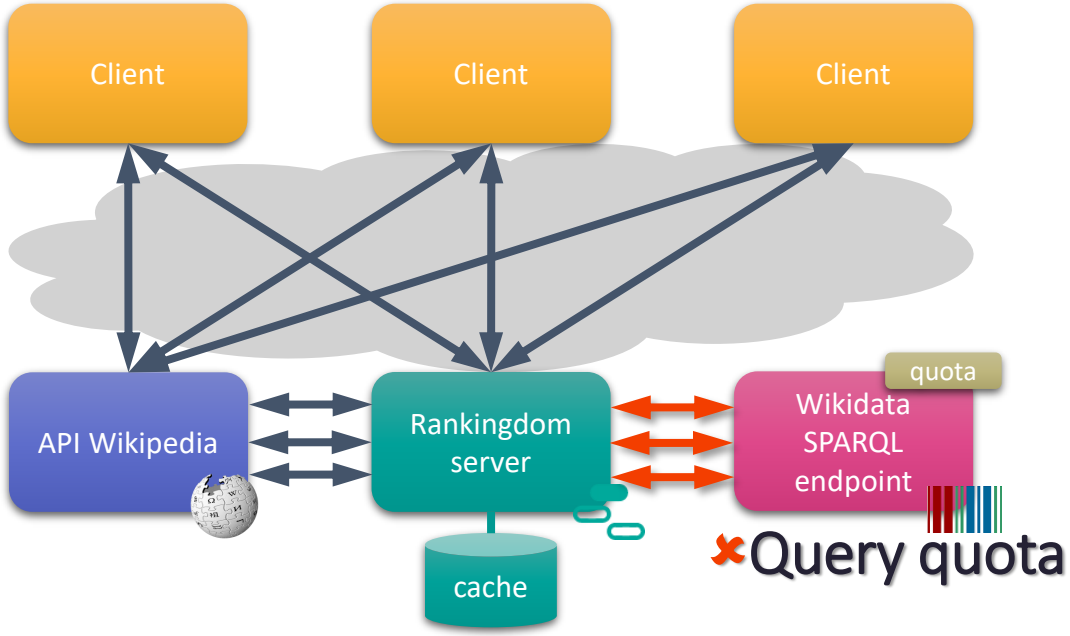
✓Computation cost



✓Query quota

Cooperative architecture for scalability

Centralized computation

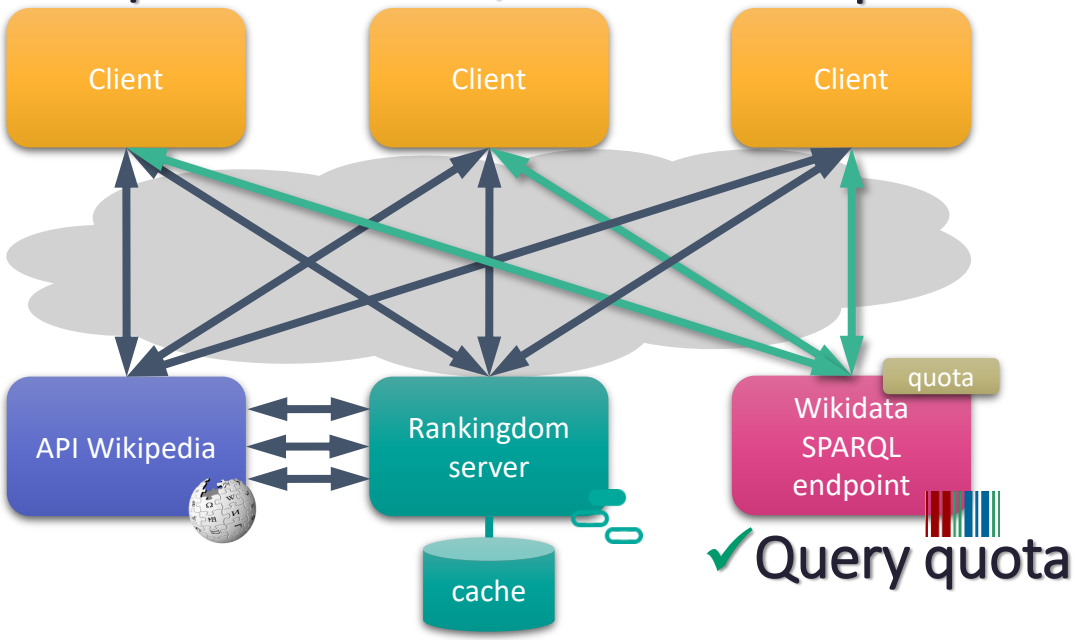


✘Query quota

✘ Computation cost

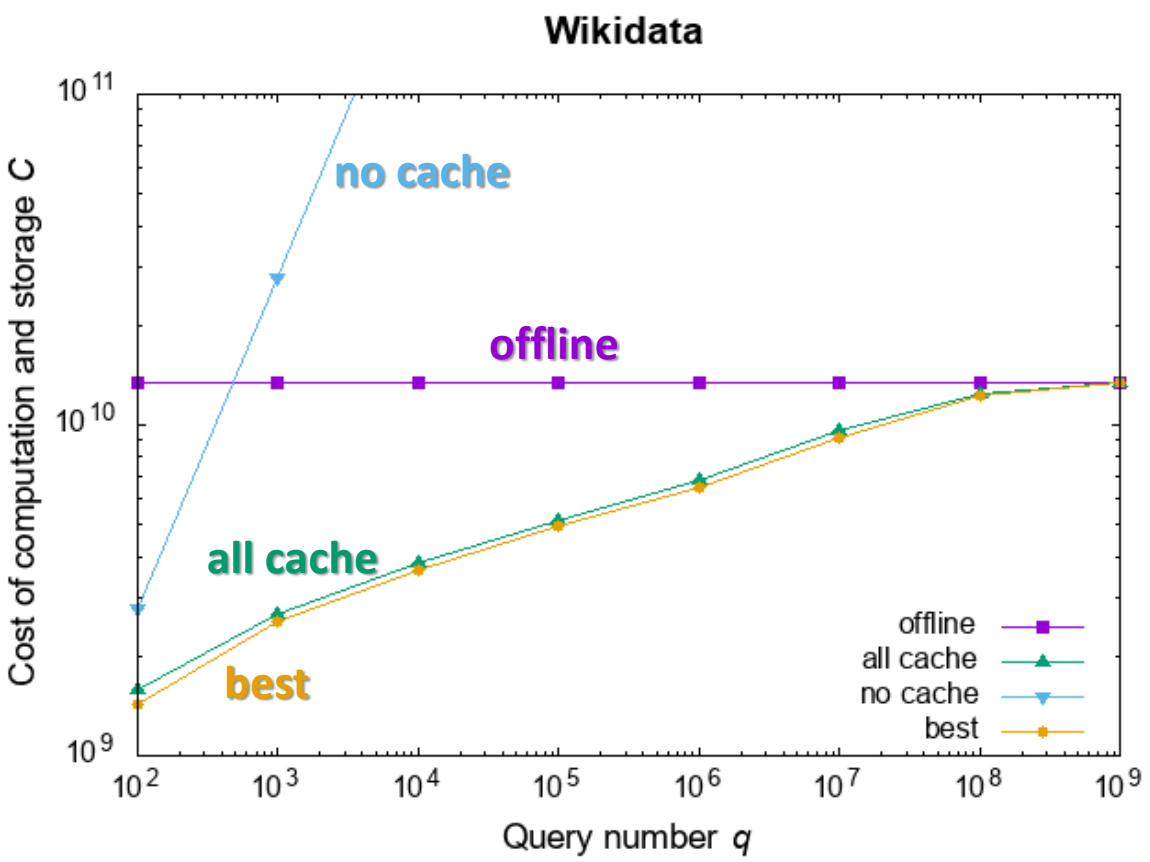
Decentralized computation

✓Comp. cost ✓Comp. cost ✓Comp. cost



✓Query quota

Cooperative architecture for frugality



- **offline**: everything is computed offline
- **no cache**: everything is computed online at each query
- **all cache**: everything is computed once and cached
- **best**: optimal solution (everything is not cached)

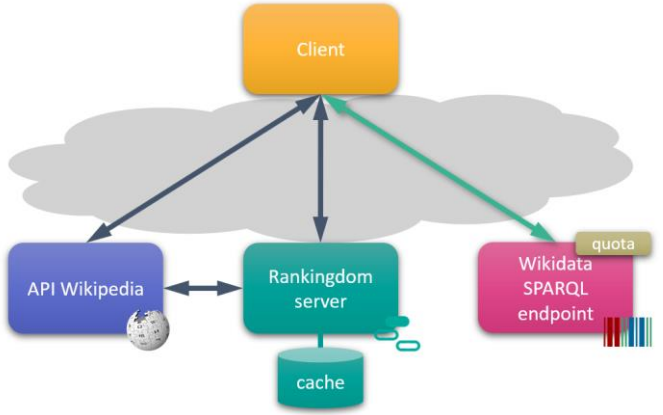
On-demand computation

Soulet, A. Should We Consider On-Demand Analysis in Scale-Free Networks?. In IDA 2023.

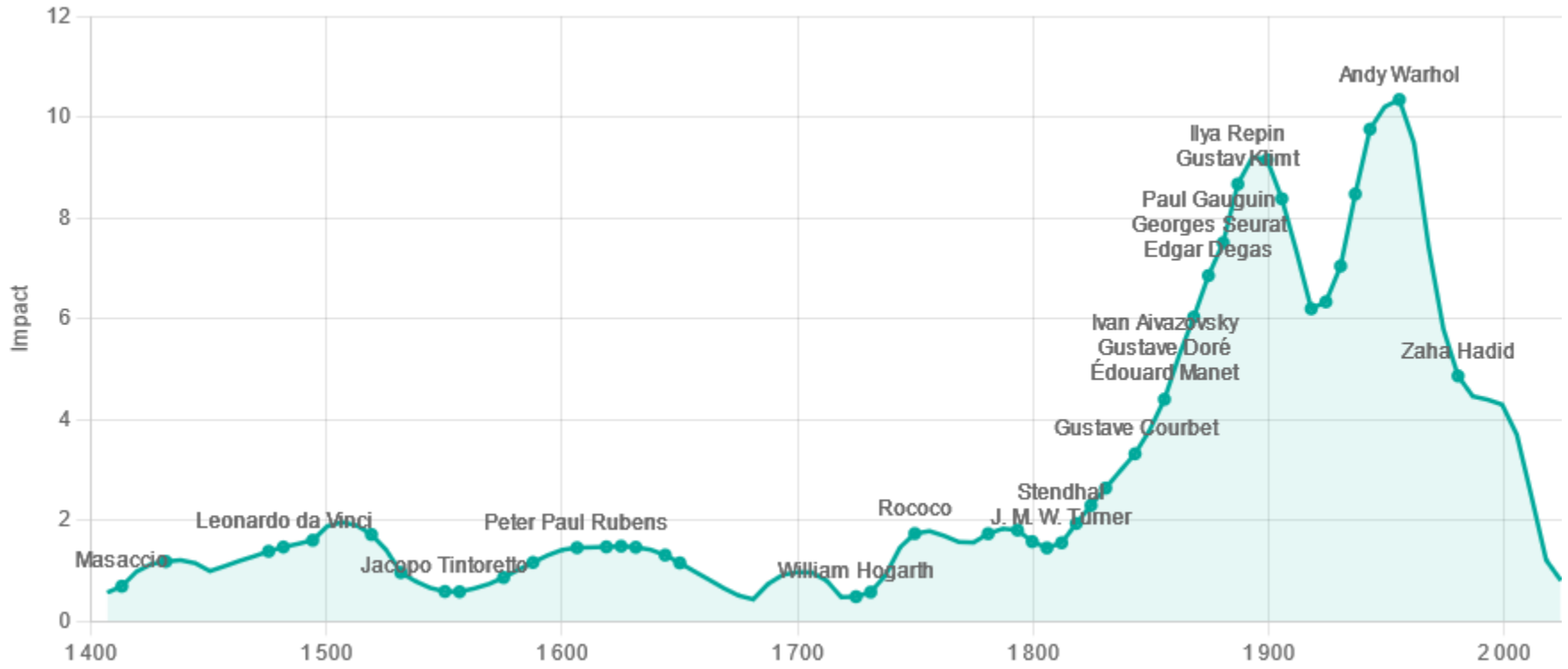
Summary

- **Data narrative** from general to specific for homogeneous analysis
- **Generic and semantic scores** for multidimensional analysis

- **On-demand computation** for freshness and diversity
- **Cooperative architecture** for scalability and frugality



Challenges: availability and selection biases



How to measure inequality and diversity in knowledge graphs?

knowledge analytics on demand from 15,501,579,370 facts

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