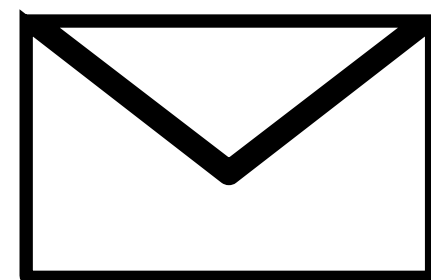


# Constructing FashionDB



**Not only What, but also When:  
Extracting Temporally Informed  
Relations From text Biographies**

Teresa Liberatore, Fina Polat



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f.yilmazpolat@uva.nl



# FashionDB: WHAT

A Database to collect and store information about (recent) fashion history.

Fashion Designer Biographical information

Fashion houses business information and fashion collections

The screenshot shows the main page of FashionDB Wikibase. At the top, there is a navigation bar with 'Main Page' and 'Discussion' tabs, and a search bar labeled 'Search WikiFashion'. The main content area is titled 'Main Page' and contains the following sections:

- FashionDB**: A brief introduction stating that the database stores information about the recent history of fashion, sourced from Wikidata, Wikipedia, Vogue, and the Fashion Model Directory. It mentions that provenance is tracked for each piece of information.
- WHY FashionDB**: Explains that the database's scope is to promote research in fashion history by leveraging the structured query capabilities of Wikibase.
- Example queries over FashionDB**: Provides a SPARQL query to find the education and dates for fashion designers. The query is as follows:
 

```
PREFIX wbt: <https://fashionwiki.wikibase.cloud/prop/direct/>
PREFIX wb: <https://fashionwiki.wikibase.cloud/entity/>
PREFIX pq: <https://fashionwiki.wikibase.cloud/prop/qualifier/>
PREFIX ps: <https://fashionwiki.wikibase.cloud/prop/statement/>
PREFIX p: <https://fashionwiki.wikibase.cloud/prop/>

SELECT ?fashiondesignerLabel ?schoolLabel ?startDate ?endDate WHERE {
  ?fashiondesigner p:P9 ?statement.
  ?statement ps:P9 ?school.

  OPTIONAL {
    ?statement pq:P15 ?startDate.
    ?statement pq:P16 ?endDate.
  }

  SERVICE wikibase:label { bd:serviceParam wikibase:language "en". }
}
```

On the right side of the page, there are two images: a tall, textured dress made of many small pieces of fabric (captioned 'Alexander McQueen clamshell dress, Spring/Summer 2001') and two mannequins wearing patterned jackets.



# FashionDB: WHAT

A Database to collect and store information about (recent) fashion history.

Fashion Designer Biographical information

Fashion houses business information and fashion collections

Item **Discussion** Read View history ★ More

## Stella McCartney (Q5435)

British fashion designer (born 1971)  
Stella Nina McCartney Willis

[In more languages](#)  
[Configure](#)

Language	Label	Description	Also known as
English	Stella McCartney	British fashion designer (born 1971)	Stella Nina McCartney Willis
British English	No label defined	No description defined	

### Statements

<b>exact match</b>	<a href="https://www.wikidata.org/wiki/Q232812">https://www.wikidata.org/wiki/Q232812</a> <span>edit</span>	<span>0 references</span> <a href="#">+ add reference</a>	<a href="#">+ add value</a>
<b>instance of</b>	<a href="#">human</a> <span>edit</span>	<span>1 reference</span>	
	<a href="#">fashion designer</a> <span>edit</span>	<span>0 references</span>	

**Alexander Wang**  
American fashion designer

**Alexander Wang**  
Alexander Wang is a fashion house from ...

**Alexander McQueen**  
British fashion designer (1969–2010)

**Alexander McQueen**  
British luxury fashion house

**Alexander Lewis**  
Alexander Lewis is a fashion house from ...

**Alexander Julian**  
American fashion designer and business ...

**Alexander Vasilyev**  
fashion historian and collector

**Alexander Amosu**  
British/Nigerian luxury designer and entre...

**Alexander Terekhov**  
Alexander Terekhov is a fashion house fro...

**Alexander Arutyunov**  
Alexander Arutyunov is a fashion house fr...



# FashionDB: WHY

Query Service: fashionwiki.wikibase.cloud Examples More tools English

```

1 PREFIX wbt: <https://fashionwiki.wikibase.cloud/prop/direct/>
2 PREFIX wb: <https://fashionwiki.wikibase.cloud/entity/>
3 PREFIX pq: <https://fashionwiki.wikibase.cloud/prop/qualifier/>
4 PREFIX ps: <https://fashionwiki.wikibase.cloud/prop/statement/>
5 PREFIX p: <https://fashionwiki.wikibase.cloud/prop/>
6
7 SELECT ?fashiondesignerLabel ?employerLabel ?startDate ?endDate WHERE {
8   ?fashiondesigner p:P10 ?statement.
9   ?statement ps:P10 ?employer.
10
11  OPTIONAL {
12    ?statement pq:P15 ?startDate.
13    ?statement pq:P16 ?endDate.
14  }
15
16  SERVICE wikibase:label { bd:serviceParam wikibase:language "en". }
17 }

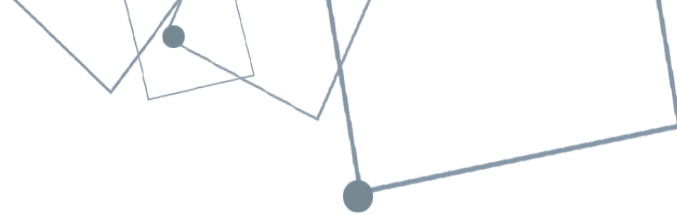
```

Timeline 744 results in 1205 ms Code Download Link

Year	Brand	Designer	Start Date	End Date
1945	Elizabeth Arden	Antonio Cas	1 January 1945	1 January 1945
1950	Lanvin	Antonio Castillo	1 January 1950	1 January 1962
1955	Balmain	Karl Lagerfeld	1 January 1955	1 January 1962
1963	Chloé	Karl Lagerfeld	1 January 1963	1 January 1983
1990	Hermès	Tomas Maier	1 January 1990	1 January 1999
1997	Hermès	Martin Margiela	1 January 1997	1 January 2003
2001	Bottega Veneta	Tomas Maier	1 January 2001	1 January 2018
2003	Guy Laroche	Marcel Marongiu	1 January 2007	1 January 2015
2004	Hermès	Jean-Paul Gault	1 January 2004	1 January 2010
2007	Givenchy	Alexander M	1 January 1997	1 January 2007



# FashionDB: WHY



Query Service: fashionwiki.wikibase.cloud Examples More tools

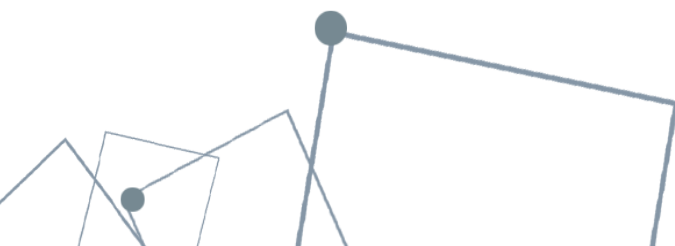
```

1 PREFIX wbt: <https://fashionwiki.wikibase.cloud/prop/direct/>
2 PREFIX wb: <https://fashionwiki.wikibase.cloud/entity/>
3 PREFIX pq: <https://fashionwiki.wikibase.cloud/prop/qualifier/>
4 PREFIX ps: <https://fashionwiki.wikibase.cloud/prop/statement/>
5 PREFIX p: <https://fashionwiki.wikibase.cloud/prop/>
6
7 SELECT ?fashiondesignerLabel ?schoolLabel ?startDate ?endDate WHERE {
8   ?fashiondesigner p:P9 ?statement.
9   ?statement ps:P9 ?school.
10
11  OPTIONAL {
12    ?statement pq:P15 ?startDate.
13    ?statement pq:P16 ?endDate.
14  }
15
16  SERVICE wikibase:label { bd:serviceParam wikibase:language "en". }
17 }
18

```

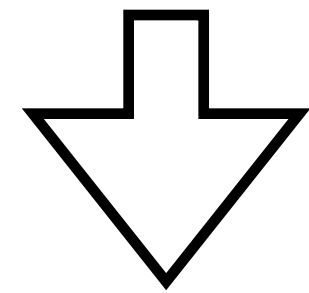
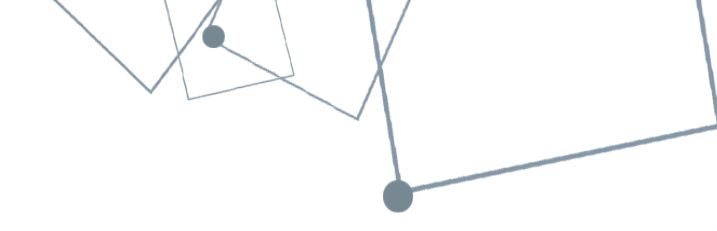
Timeline

1965	1966	1967	1968	1969	1970	1971	1972
Fashion Institute of Technology John Anthony 1 January 1968 1 January 1959				Paul-Valéry-Montpellie Christian Lacroix 1 January 1971 1 January 1969			

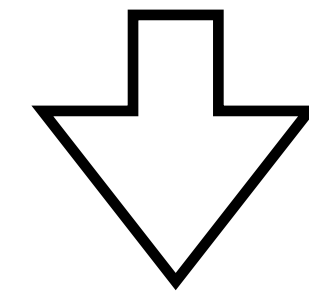




# Where does the data come from?



Structured  
BUT  
incomplete



“Complete”  
BUT  
unstructured



# Wikidata

occupation	personal stylist		edit
	- 0 references		+ add reference
	actor		edit
	- 0 references		+ add reference
fashion designer		edit	
	- 0 references		+ add reference
			+ add value
educated at	Central Saint Martins		edit
	› 1 reference	<b>When?</b>	
	Ravensbourne University London		edit
	- 0 references	<b>When?</b>	+ add reference
	Bexhill College		edit
	› 1 reference	<b>When?</b>	
Rye College		edit	
› 1 reference	<b>When?</b>		
South Houston High School		edit	
› 1 reference	<b>When?</b>		
			+ add value
affiliation	Stella McCartney		edit
	› 1 reference		+ add value

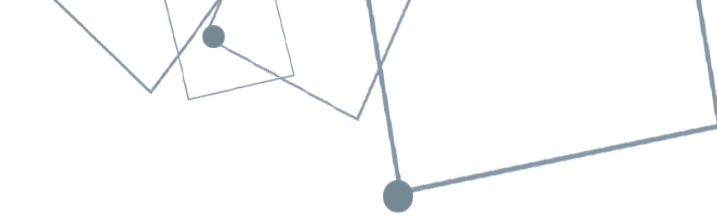
Employer?

When?

Work Location?

When?

Structured  
BUT  
incomplete



DESIGNERS > STELLA MCCARTNEY > BRANDS

## the designers

Stella McCartney was born on September 13, 1971, the daughter of Paul McCartney, member of the Beatles singing group. She is a British fashion designer. Stella has always been fascinated by fashion. As a teenager, she was always mixing up bits and pieces for antique clothing markets with Cerruti or Lacoste, or whatever she could find in her mother's cupboards.

At the age of 13, Stella constructed her first jacket. At 15, she was apprenticing at Christian Lacroix and soon after was awarded a place at St. Martins. She was almost instantly successful, with her graduation collection being sported at the graduation show by supermodels Kate Moss and Naomi Campbell. The show made front-page news, and the entire collection was sold to Tokio, a London boutique. After graduating from Central St. Martins, London, she did a short, unofficial, apprenticeship with Edward Sexton, a Savile Row tailor.

In 1997 McCartney was appointed chief designer at Paris fashion house Chloe, following in the footsteps of Karl Lagerfeld. She started with the Autumn/Winter 1997 collection, and has been an astounding success. A Chloe boutique has opened in London, though it is hoped that Stella can have more control on the London end than she does on the Paris end. The rather elderly staff at Paris Chloe are pretty rigid about underclothes on the models, and see-through dresses (they are against them). Stella McCartney is a strict vegetarian and PETA supporter like her mother Linda, who died in 2000. She had a contract with Chloe that she need never work with fur or leather. All the shoes are made of vinyl or plastics, all the bags and belts of fabric or raffia. Her soft romantic clothes have been very successful at Chloe. For the Spring 2000 collection, she has created several designs with cut-work rhinestone necklines and bodices.

In the year 2000, Stella McCartney was approached by Tom Ford of Gucci, with an offer of financial support so that she could set up her own label. She agreed to this, and left Chloe. Her assistant at Chloe, Phoebe Philo, took over the designing at Chloe. Stella was looking for an artist to illustrate her new venture. She saw a 1972 sketch made by British artist David Remfry, and after seeing his work, decided that he was the one. In 2002 Remfry prepared the McCartney adverts which appeared in all the leading fashion magazines. The sketches were so eye-catching and sexy that they blew the whole industry away.

“Complete”  
BUT  
unstructured

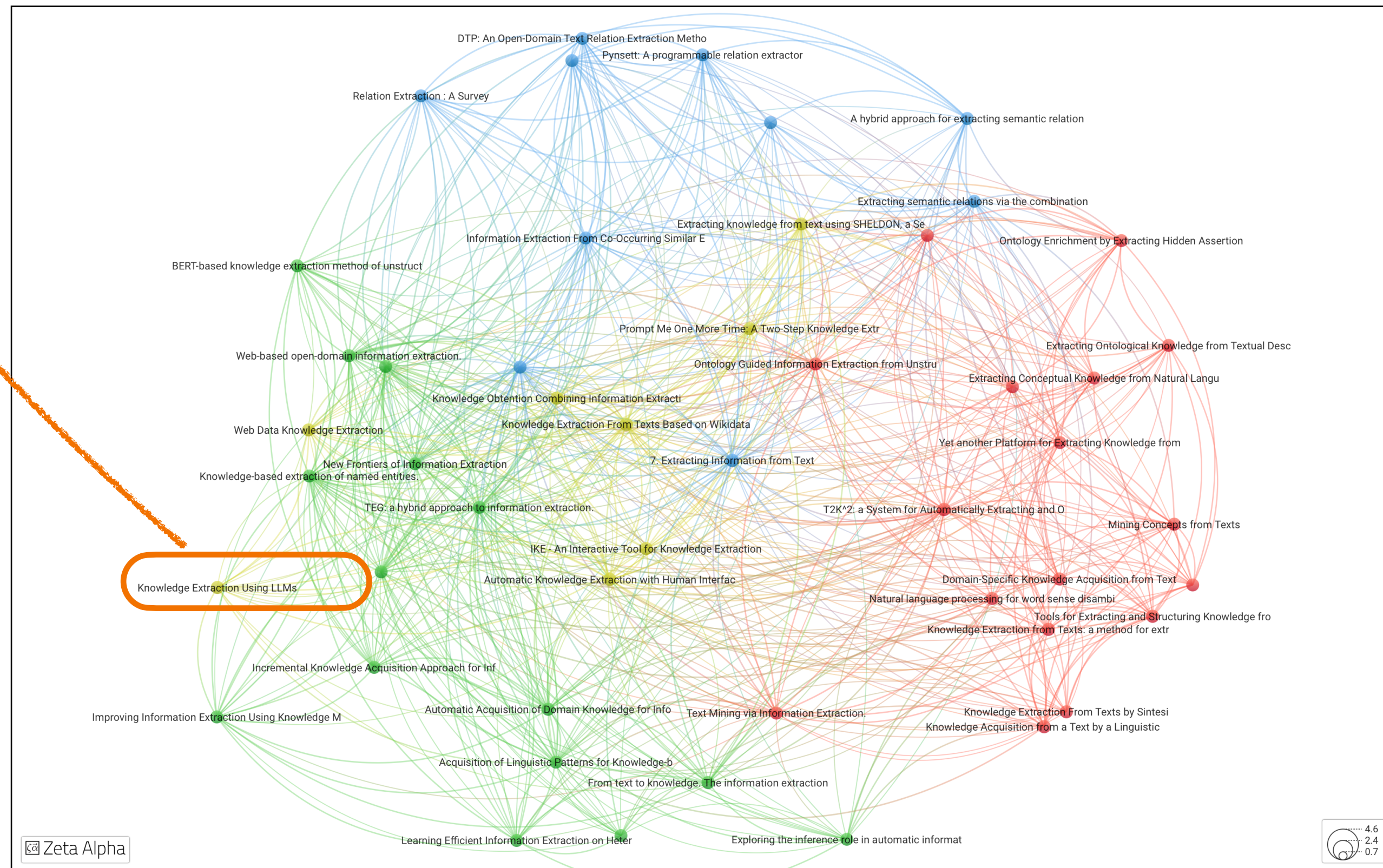




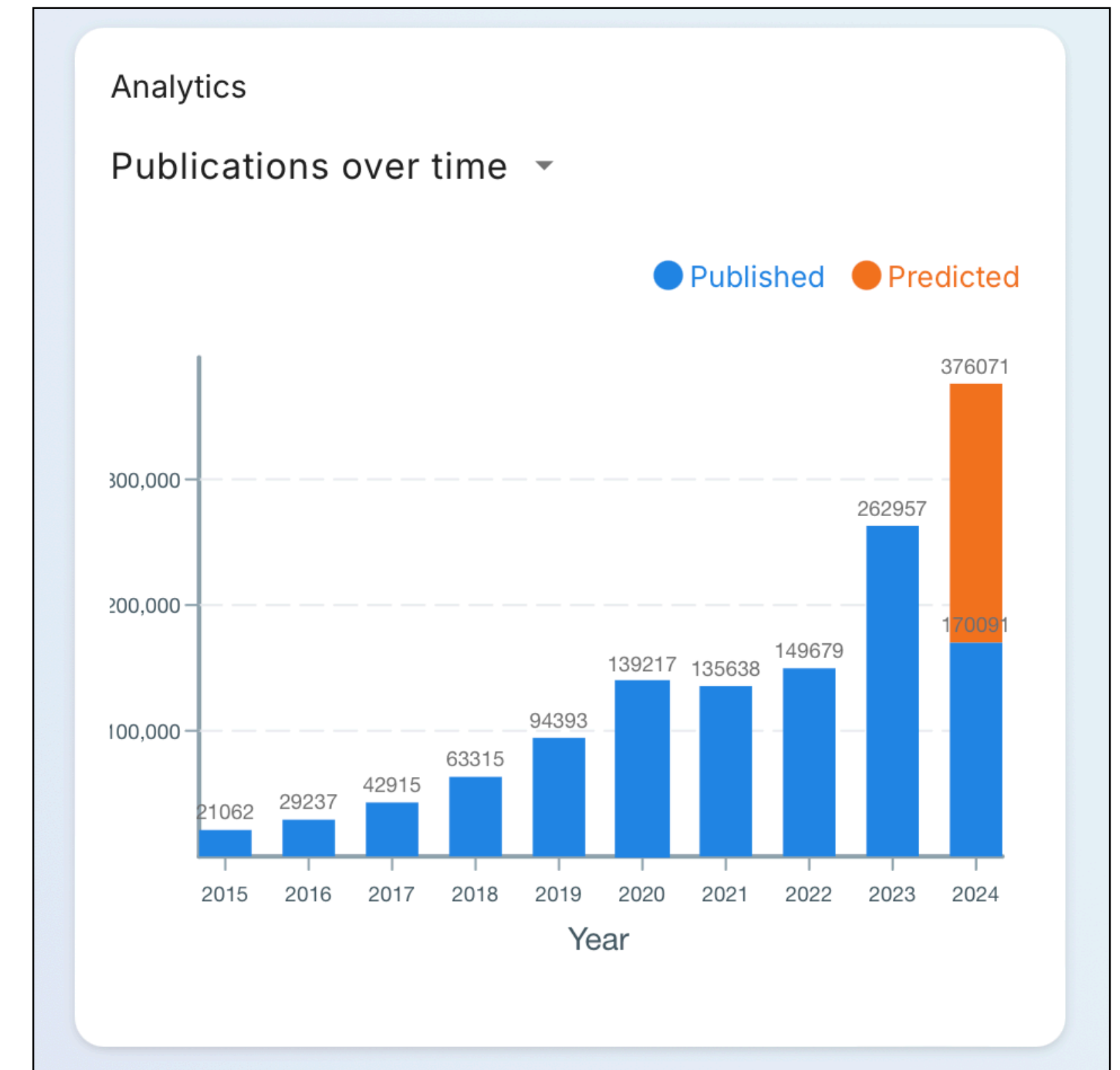
# We have many designers...

Manual extraction and annotation = €€€

## Knowledge extraction from text



## Knowledge extraction from text using LLM



## Text2KGBench

Given the following ontology, examples and sentences, please extract the triples from the sentence according to the relations in the ontology. In the output, only include the triples in the given output format.

**CONTEXT:**

**Ontology Concepts:** human, city, country, film, film genre, film production company, film award, award, written work, film character, film organization

**Ontology Relations:** cast\_member(film, human), director (film, human), screenwriter (film, human), producer(film, human), genre(film, genre), based\_on(film, written work), award\_received (film, award), production\_company(film, film production company), country\_of\_origin(film, country), publication\_date (film, date), characters(film, film character), narrative\_location(film, city), filming\_location(film, city), main\_subject(film, thing), nominated\_for(film, award), cost(film, number)

**Example Sentence:** *The Lion King is a animated musical drama film about a lion cub who is to succeed his father and it was directed by Roger Allers and Rob Minkoff (in their feature directorial debuts), produced by Don Hahn.*

**Example Output:** director(Lion King, Roger Allers)  
director(Lion King, Rob Minkoff)  
producer(Lion King, Don Hahn)

**Test Sentence:** Birds Anonymous is a 1957 Warner Bros. Merrie Melodies animated short, directed by Friz Freleng and written by Warren Foster.

**Test Output:**



screenwriter(Birds Anonymous, Warren Foster)  
director(Birds Anonymous, Friz Freleng)  
publication\_date(Birds Anonymous, 1957)  
production\_company(Birds Anonymous, Warner Bros.)  
genre(Birds Anonymous, animated film)

LLM  
Output

Instruction

Verbalized  
Ontology

Example(s)

Input  
Sentence(s)

## WikiFashion

**System:** You extract structured information from biographies about a fashion designer's education, employment, work locations, and awards. Only generate the output in JSON format. Use the example output as a reference for format only.

**User:** Given the following ontology and sentences, please extract the triples from the sentence according to the relations in the ontology. In the output, only include the triples in the given output format.

**Ontology Concepts:** academic institution, fashion house, fashion award, city

**Ontology Relations:** {"educated\_at": [[academic institution, **start\_date**, **end\_date**]], "employer": [[fashion house, title, **start\_date**, **end\_date**]], "work\_location": [[city, **start\_date**, **end\_date**]], "award\_received": [[fashion award, **year**]]}

**Synthetic Example Sentence:** Evelyn Marlow was born in 1975 in Sunvale, Arborland. Her mother moved from Loria in the early 1970s. Evelyn grew up in the quiet town of Willowford. From a young age, she saved her allowance to buy custom pieces from boutique designers. After two rejections, Evelyn was finally accepted into the prestigious Avondale Institute of Design (AID) in 1995. While studying, she interned with Laurent Jovin, an influential designer known for his unique cuts and materials. She graduated with honors in 1998. In 1999, Evelyn launched her own label, Marlow Atelier, debuting her first collection at the Windora Fashion Week in 2000. Her designs quickly garnered attention, particularly from Sofia Dreyer, a lead buyer for The House of Fleura, one of the top fashion houses in the region. This led to her first big sale when The House of Fleura purchased her entire collection. With her bold, sculptural designs and a fearless use of color, Evelyn's pieces were often accompanied by custom accessories crafted by Silvan Locke. By her fifth season in 2002, she had secured a partnership with Modevera Group, a highly regarded fashion conglomerate. From 2004 to 2006, Evelyn designed for the renowned brand Atelier Amare in Feronna. After spending a few years in Willowford, she moved her operations to the artistic hub of Celestia in 2006. That same year, Evelyn received the Arbor Fashion Laureate for her pioneering work with sustainable fabrics. She collaborated with Atelier Amare for several years before eventually signing a contract with Nouveau & Co. in 2009, where she continued to make waves in the fashion industry. Her 2010 fall collection, known for its modern yet timeless appeal, was highly praised at the Celestia Couture Show. Evelyn remains a leading advocate for sustainable fashion and is celebrated for her avant-garde designs that blend eco-consciousness with luxury.

**Example output:** {"educated\_at": [{"Avondale Institute of Design (AID)", "1995", "1998"}], "employer": [{"Laurent Jovin", "intern", "", "1997"}, {"Marlow Atelier", "founder", "1999", ""}, {"The House of Fleura", "sold collection", "2000", ""}, {"Atelier Amare", "designer", "2004", "2006"}, {"Nouveau & Co.", "designer", "2009", ""}], "work\_location": [{"Willowford", "", "2006"}, {"Celestia", "2006", ""}], "award\_received": [{"Arbor Fashion Laureate", "2006"}]}

**Test sentence:**

**Test output:**



# What do we include in the prompt?



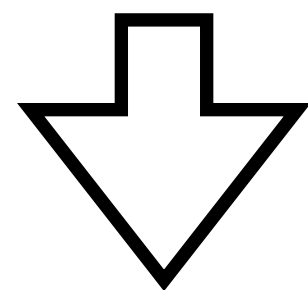
## Gemma 2

**Example text:** *Text*

**Example output:** *Example KG*

**Input text:** *Text*

**Output:**



One shot learning

**User prompt:** Given the following ontology and sentences, please extract the triples from the sentence according to the relations in the ontology. In the output, only include the triples in the given output format.

**Ontology concepts:**  
academic institution, fashion house, fashion award, city

**Ontology:** {"*educated\_at*": [[academic institution, **start\_date**, **end\_date**]], "*employer*": [[fashion house, title, **start\_date**, **end\_date**]], "*work\_location*": [[city, **start\_date**, **end\_date**]], "*award\_received*": [[fashion award, **year**]]}

# Wikidata

<b>occupation</b>	<ul style="list-style-type: none"> <li>personal stylist <span>edit</span></li> <li>- 0 references <span>+ add reference</span></li> <li>actor <span>edit</span></li> <li>- 0 references <span>+ add reference</span></li> <li>fashion designer <span>edit</span></li> <li>- 0 references <span>+ add reference</span></li> <li><span>+ add value</span></li> </ul>
<b>educated at</b>	<ul style="list-style-type: none"> <li>Central Saint Martins <span>When?</span></li> <li>1 reference</li> <li>Ravensbourne University London <span>When?</span></li> <li>- 0 references <span>+ add reference</span></li> <li>Bexhill College <span>When?</span></li> <li>1 reference</li> <li>Rye College <span>When?</span></li> <li>1 reference</li> <li>South Houston High School <span>When?</span></li> <li>1 reference</li> <li><span>+ add value</span></li> </ul>
<b>affiliation</b>	<ul style="list-style-type: none"> <li>Stella McCartney <span>edit</span></li> <li>1 reference</li> <li><span>+ add value</span></li> </ul>

# FashionDB

<b>employer</b>	<ul style="list-style-type: none"> <li>Stella McCartney <span>edit</span></li> <li>occupation title: founder</li> <li>start time: 2000</li> <li>2 references</li> <li>reference URL: <a href="https://www.fashionmodeldirectory.com/designers/stella-mccartney/">https://www.fashionmodeldirectory.com/designers/stella-mccartney/</a></li> <li>reference URL: <a href="https://ollama.com/library/gemma2">https://ollama.com/library/gemma2</a></li> <li><span>+ add reference</span></li> <li>Christian Lacroix <span>edit</span></li> <li>occupation title: apprentice</li> <li>end time: 1995</li> <li>1 reference</li> <li>reference URL: <a href="https://www.fashionmodeldirectory.com/designers/stella-mccartney/">https://www.fashionmodeldirectory.com/designers/stella-mccartney/</a></li> <li>reference URL: <a href="https://ollama.com/library/gemma2">https://ollama.com/library/gemma2</a></li> <li><span>+ add reference</span></li> <li>Chloé <span>edit</span></li> <li>occupation title: chief designer</li> <li>start time: 1997</li> <li>end time: 2000</li> <li>reference URL: <a href="https://www.fashionmodeldirectory.com/designers/stella-mccartney/">https://www.fashionmodeldirectory.com/designers/stella-mccartney/</a></li> <li>reference URL: <a href="https://ollama.com/library/gemma2">https://ollama.com/library/gemma2</a></li> <li>0 references</li> <li><span>+ add reference</span></li> <li><span>+ add value</span></li> </ul>
-----------------	--

DESIGNERS > STELLA MCCARTNEY > BRANDS

**the designers**

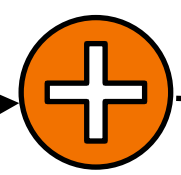
Stella McCartney was born on September 13, 1971, the daughter of Paul McCartney, member of the Beatles singing group. She is a British fashion designer. Stella has always been fascinated by fashion. As a teenager, she was always mixing up bits and pieces for antique clothing markets with Carnal or Lacoste, or whatever she could find in her mother's cupboards.

At the age of 13, Stella constructed her first jacket. She was apprenticing at Christian Lacroix and working for Karl Lagerfeld.

She was almost instantly successful, with her graduation collection being spotted at the graduation show by supermodels Kate Moss and Naomi Campbell. The show made frontpage news, and the entire collection was sold to Tokio, a London boutique. After graduating from Central St. Martins, London, she did a short, unofficial, apprenticeship with Edward Sexton, a Savile Row tailor.

McCartney was appointed chief designer of British fashion house Chloé, following in the footsteps of Karl Lagerfeld. She worked with the Autumn/Winter 1997 collection, and has been an outstanding success. A Chloé boutique has opened in London, though it is hoped that Stella can have more control on the London end than she does on the Paris end. The rather elderly staff of Paris Chloé are pretty rigid about underclothes on the models, and see-through dresses (they are against them). Stella McCartney is a strict vegetarian and PETA supporter like her mother (inde, who died in 2000). She had a contract with Chloé that she need never work with fur or leather. All the shoes are made of vinyl or plastics, all the bags and belts of fabric or raffia. Her soft romantic clothes have been very successful at Chloé. For the Spring 2000 collection, she has created several designs with cut-work rhinestone necklines and bodices.

In the year 2000, Stella McCartney was approached by Tom Ford of Gucci with an offer of financial support so that she could set up her own label. She agreed to this, and left Chloé. Her assistant at Chloé, Proenza Schouler, took over the designing at Chloé. Stella was looking for an artist to illustrate her new venture. She saw a 1972 sketch made by British artist David Kenley, and after seeing his work, decided that he was the one. In 2002 Kenley prepared the McCartney adverts, which appeared in all the leading fashion magazines. The sketches were so eye-catching and sexy that they blew the whole industry away.



Gemma 2

Employer?

When?

Work Location?

When?



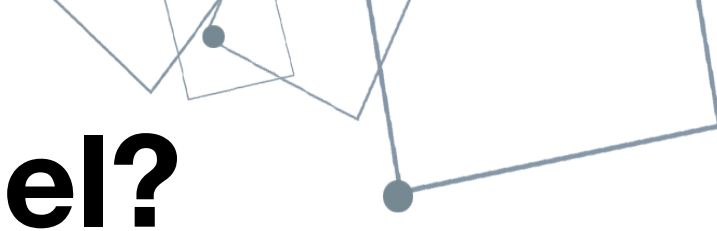
**Stella McCartney**  
retailer of the designer's luxe women's fashions & a...

**Stella McCartney**  
British fashion designer (born 1971)

Search for pages containing  
*Stella mc*



# How do we know which entity is which if they have the same label?



## Entity Disambiguation

We exploit ontology and class attribution.

**Stella McCartney** (Q4127)

retailer of the designer's luxe women's fashions & accessories [edit](#)

[In more languages](#)  
Configure

Language	Label	Description	Also known as
English	Stella McCartney	retailer of the designer's luxe women's fashions & accessories	
British English	No label defined	No description defined	

**Statements**

instance of

- brick and mortar [edit](#)  
▶ 1 reference
- business** [edit](#)  
▶ 1 reference
- fashion label [edit](#)  
▶ 1 reference
- fashion house** [edit](#)  
= 0 references

+ add reference

**Stella McCartney** (Q5435)

British fashion designer (born 1971)  
Stella Nina McCartney Willis [edit](#)

[In more languages](#)  
Configure

Language	Label	Description	Also known as
English	Stella McCartney	British fashion designer (born 1971)	<b>Stella Nina McCartney Willis</b>
British English	No label defined	No description defined	

**Statements**

exact match [edit](#)  
<https://www.wikidata.org/wiki/Q232812>  
▶ 0 references  
+ add reference  
+ add value

instance of

- human [edit](#)  
▶ 1 reference
- fashion designer** [edit](#)  
= 0 references

+ add reference  
+ add value



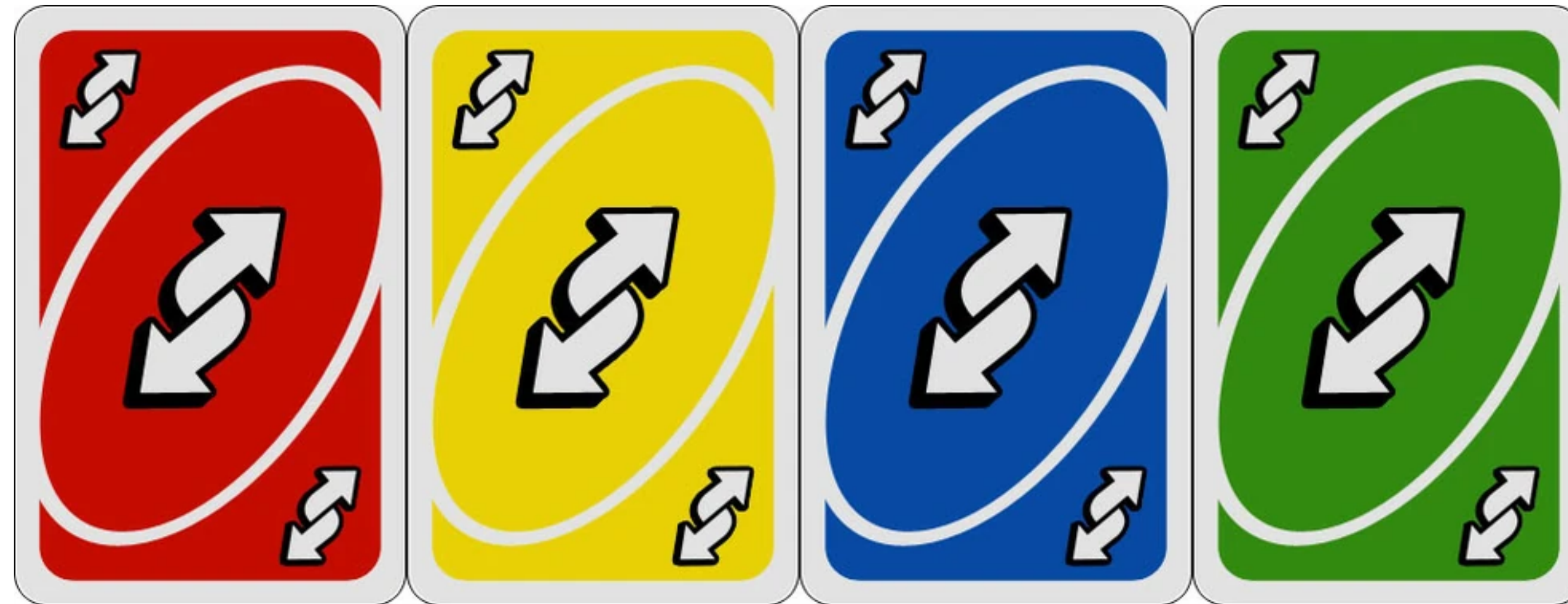


# How do we evaluate this?



1. Extract multiple times and then consider as correct the extracted statements consistent across extractions

2.





# Present, Past & Future Work



FashionDB



Paper at EKAW  
next week at 

CLOIR GitHub repo

**Influence beyond similarity:  
A Contrastive Learning approach to Object Influence  
Retrieval**

Teresa Liberatore<sup>1</sup>, Paul Groth<sup>1</sup>, Monika Kackovic<sup>1</sup>, Nachoem Wijnberg<sup>1,2</sup>

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t.liberatore@uva.nl