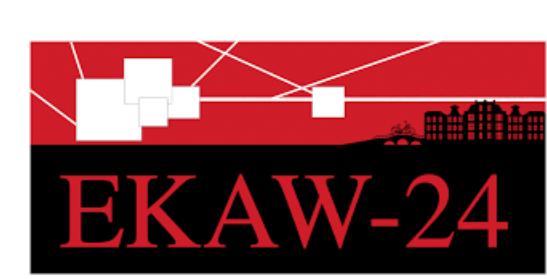




# Influence beyond similarity

A contrastive learning approach to Object Influence Retrieval



Teresa Liberatore, Paul Groth, Monika Kackovic, Nachoem Wijnberg

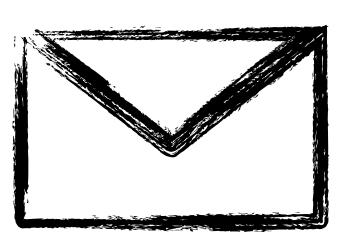
**INDE lab**

UNIVERSITY OF AMSTERDAM  
Amsterdam Business School



GitHub repo

Link to the paper



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## WHY

### POV: creative industries management

Curation of engaging art exhibitions based on objects influences

#### Exhibition Matthew Wong | Vincent van Gogh

The work of the Chinese-Canadian artist Matthew Wong (1984-2019) is dynamic, colourful and expressive. Of the many artists who inspired him, Vincent van Gogh was the most significant. This exhibition explores your own artistic connection with Van Gogh.

Source: <https://www.vangoghmuseum.nl/en/visit/whats-on/exhibitions/overview-past-exhibitions/matthew-wong-vincent-van-gogh>

Protect artistic originality with objects influences discoveries

Getty Images is suing the creators of AI art tool Stable Diffusion for scraping its content

Source: <https://www.theverge.com/2023/1/17/23558516/ai-art-copyright-stable-diffusion-getty-images-lawsuit>

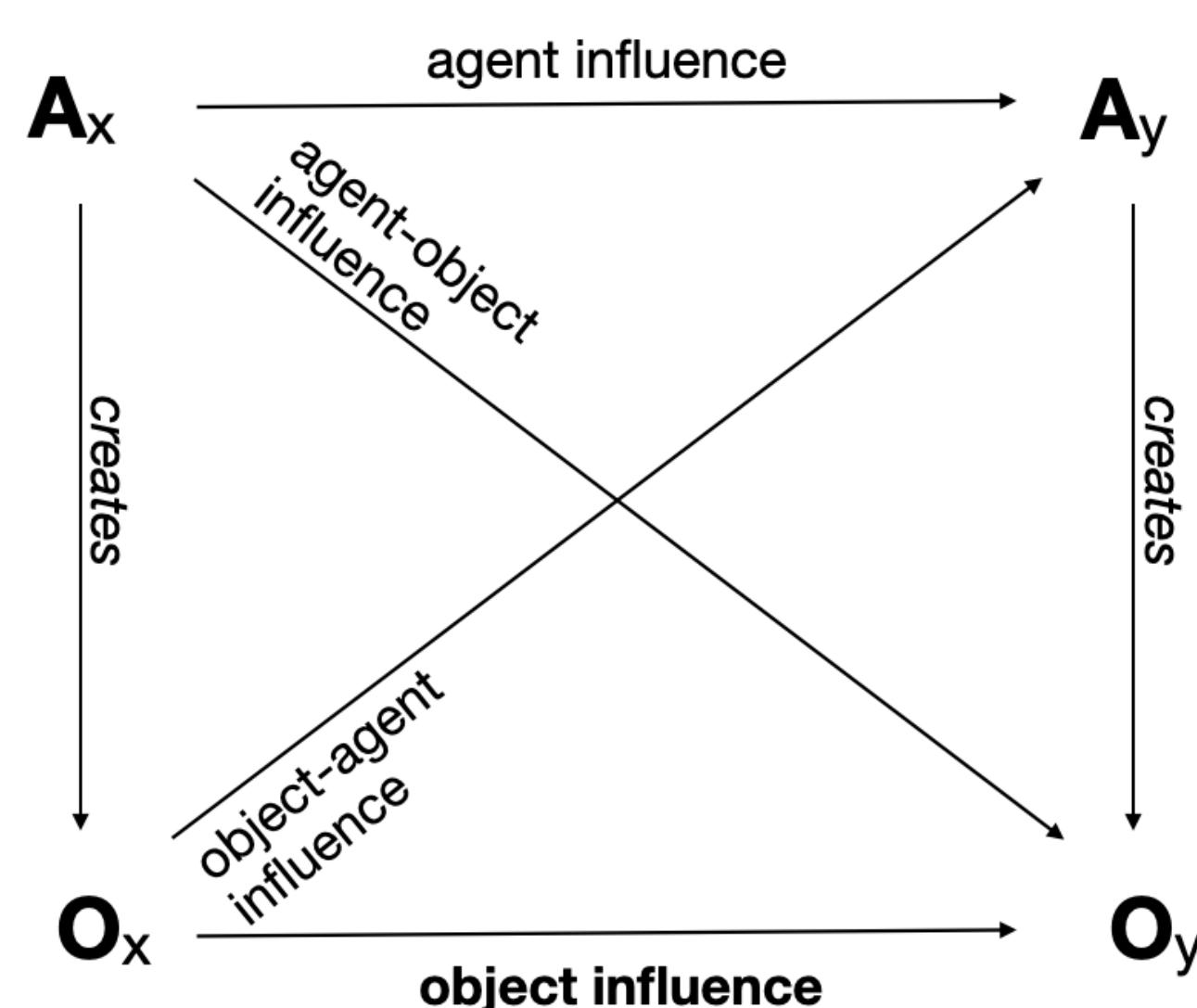
### POV: knowledge management

**A new task!**

#### Object Influence Retrieval

Given an object, retrieve the objects that potentially influenced it.

## WHAT - Object Influence

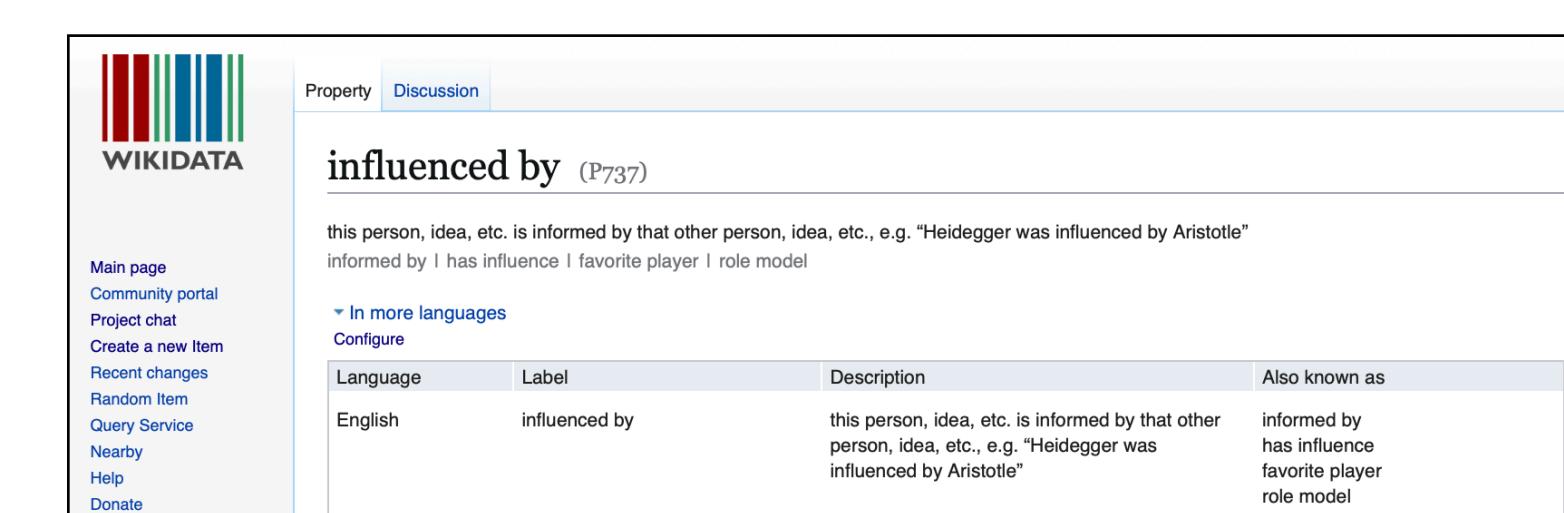


Source: <https://blog.academyart.edu/art-school-inspiration-artworks-that-inspired-other-artworks/>

Influence Beyond Similarity: A Contrastive Learning Approach to Object Influence Retrieval  
5. Alfieri, F., Aspasia, L., Lazzari, N., Presutti, V.: Creative influence prediction using graph theory. In: CREAIS AP'1A, pp. 1–15 (2023)  
6. Saleh, B., Abe, K., Anora, R.S., Elgammal, A.: Toward automated discovery of artistic influence. Multimedia Tools Appl. 75, 3565–3591 (2016). <https://link.springer.com/article/10.1007/s11042-014-2193-x>

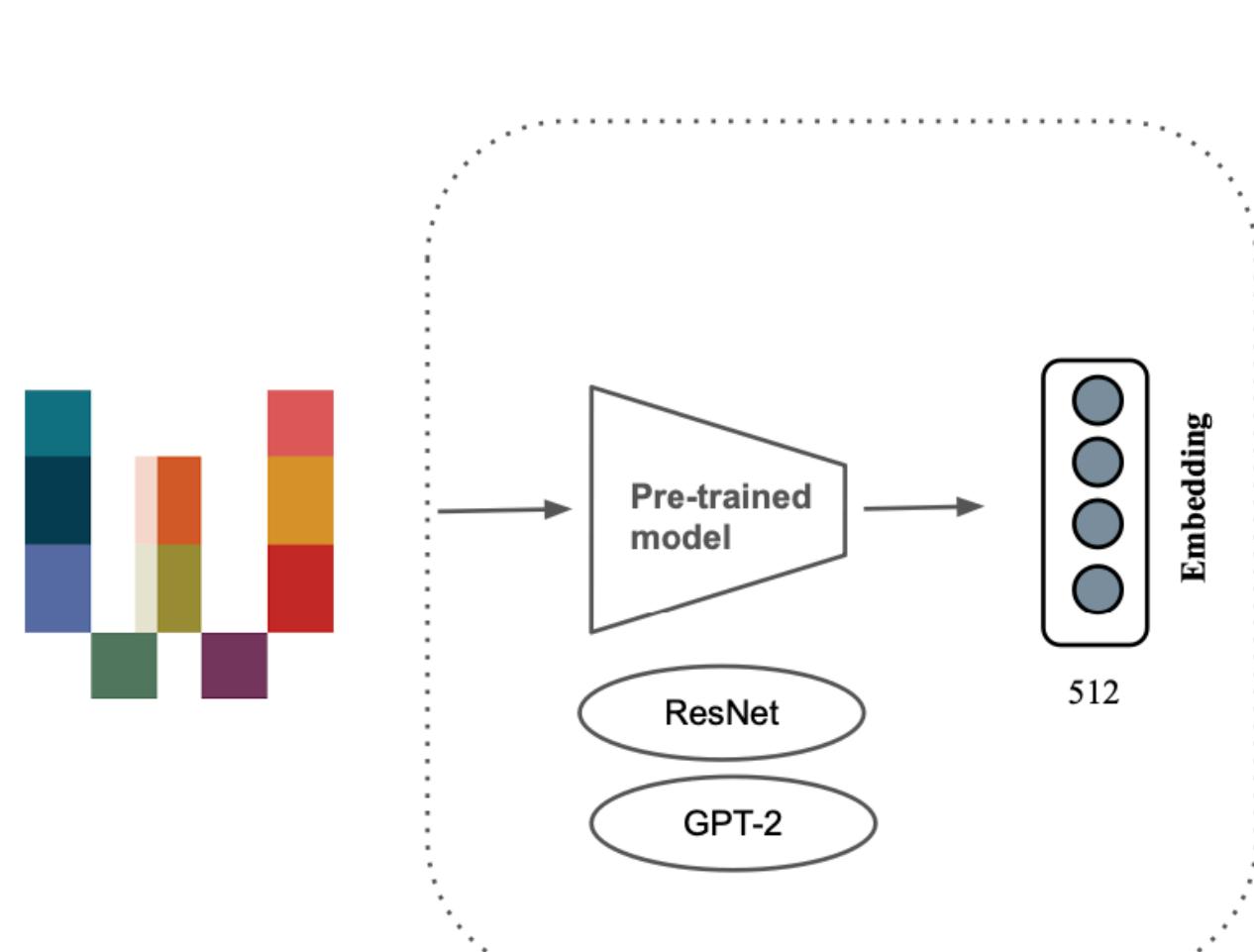
Paper citations

## WHERE - does the data come from?

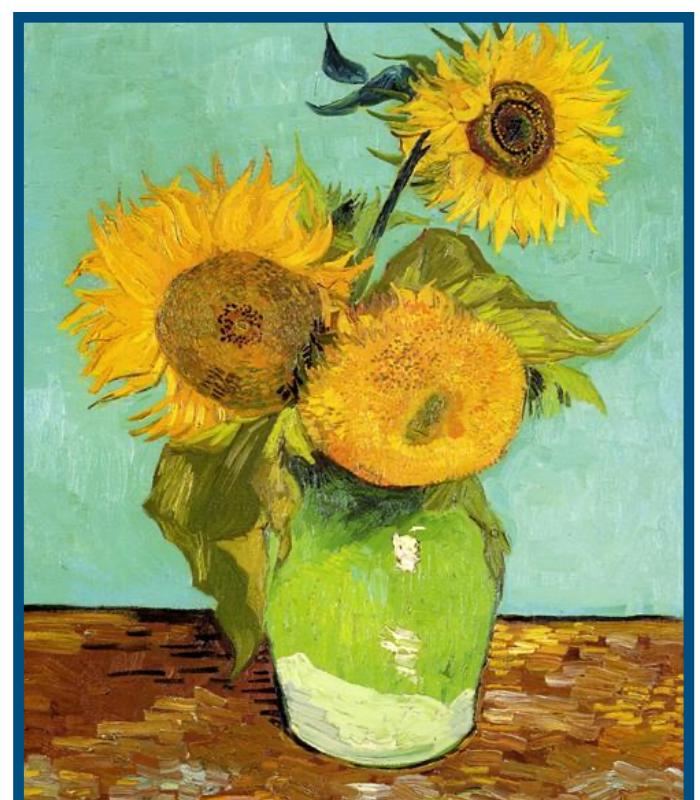


WikiArtINFL

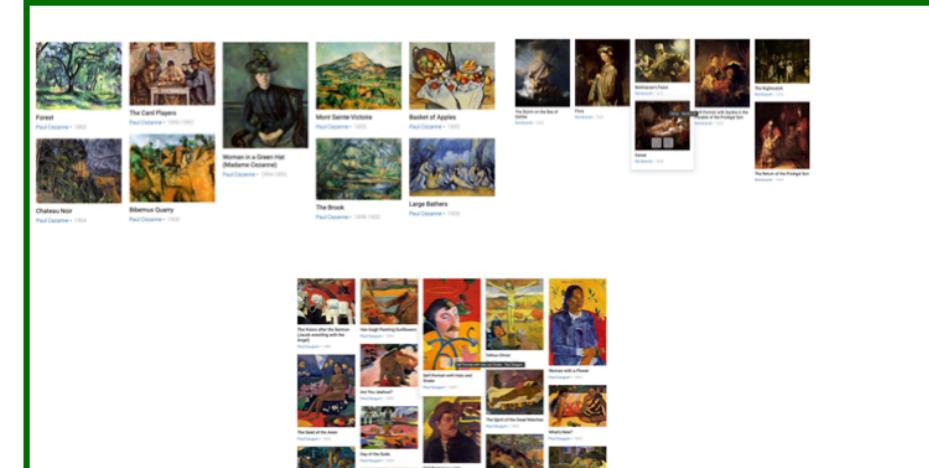
## HOW - CLOIR



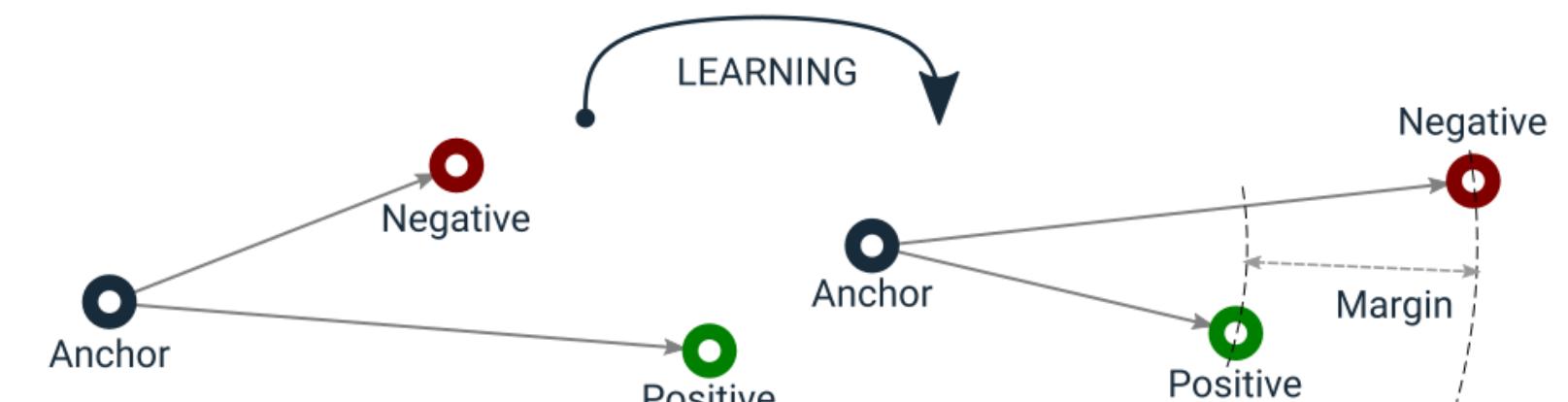
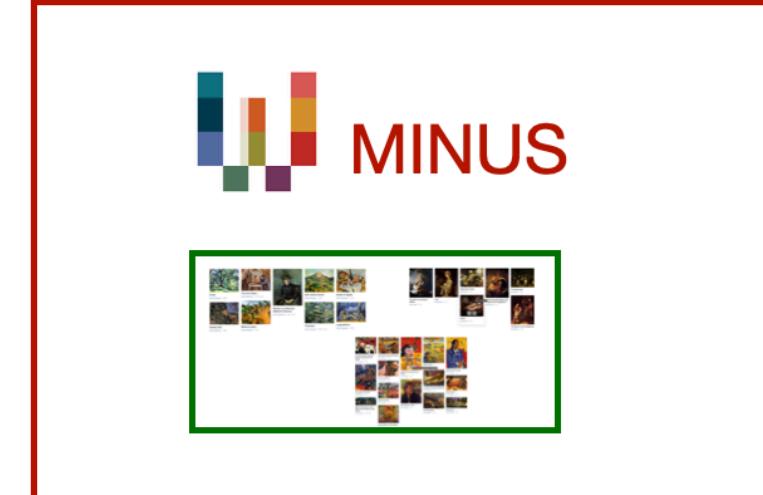
ANCHOR OBJECT  $O_x$ : made by Agent  $A_x$



Potential positives: all objects made by the (known) influencers of agent  $A_x$

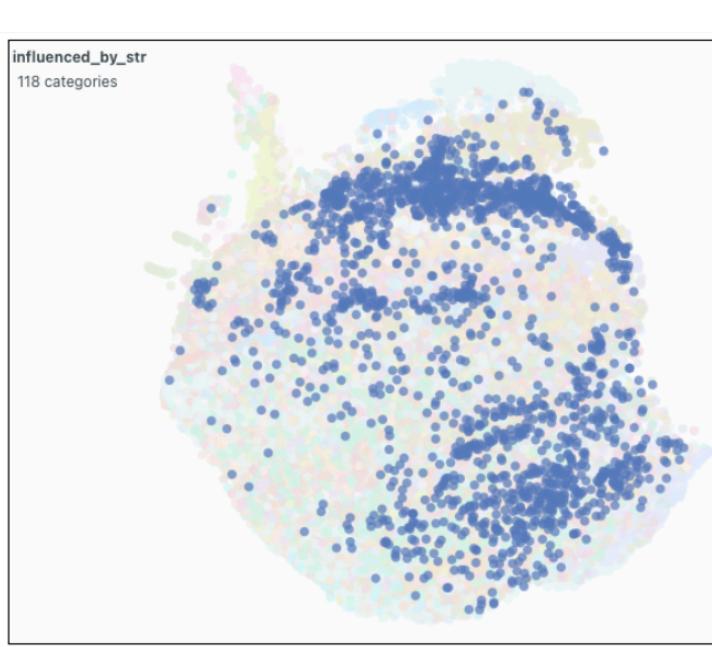


Potential negatives: all the objects in the dataset MINUS the potential positives

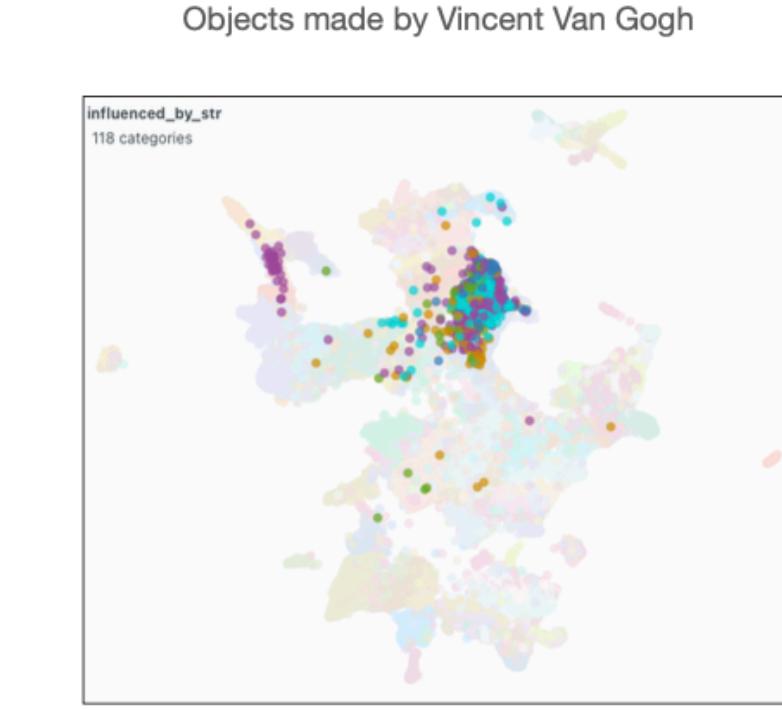
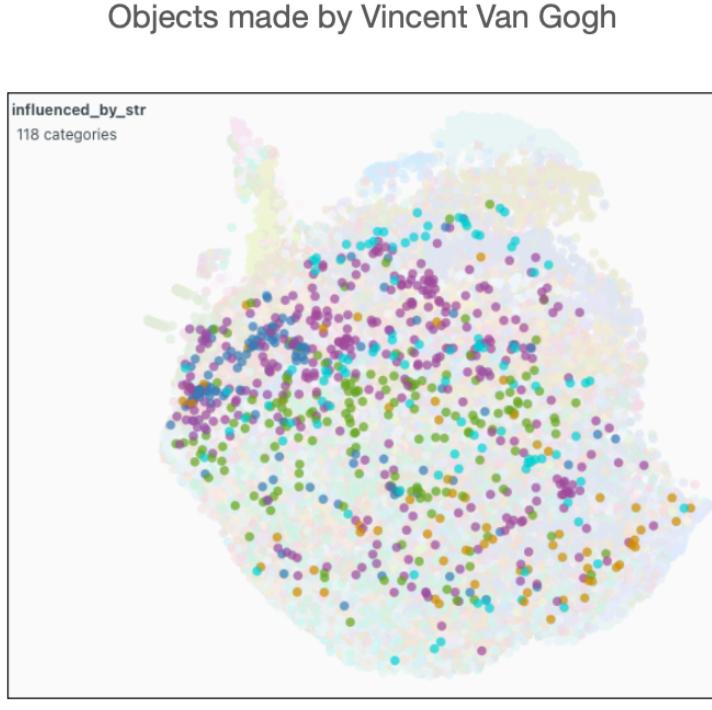
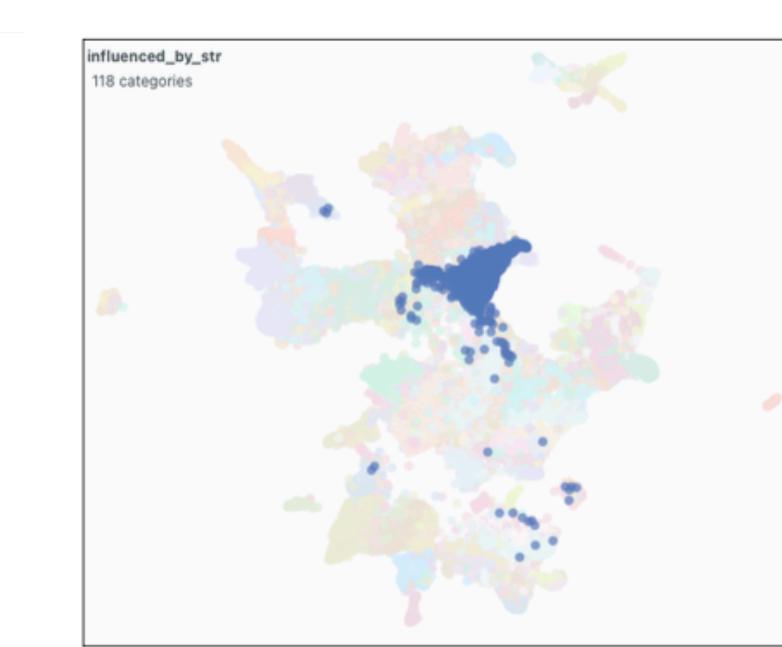


## RESULTS

Baseline



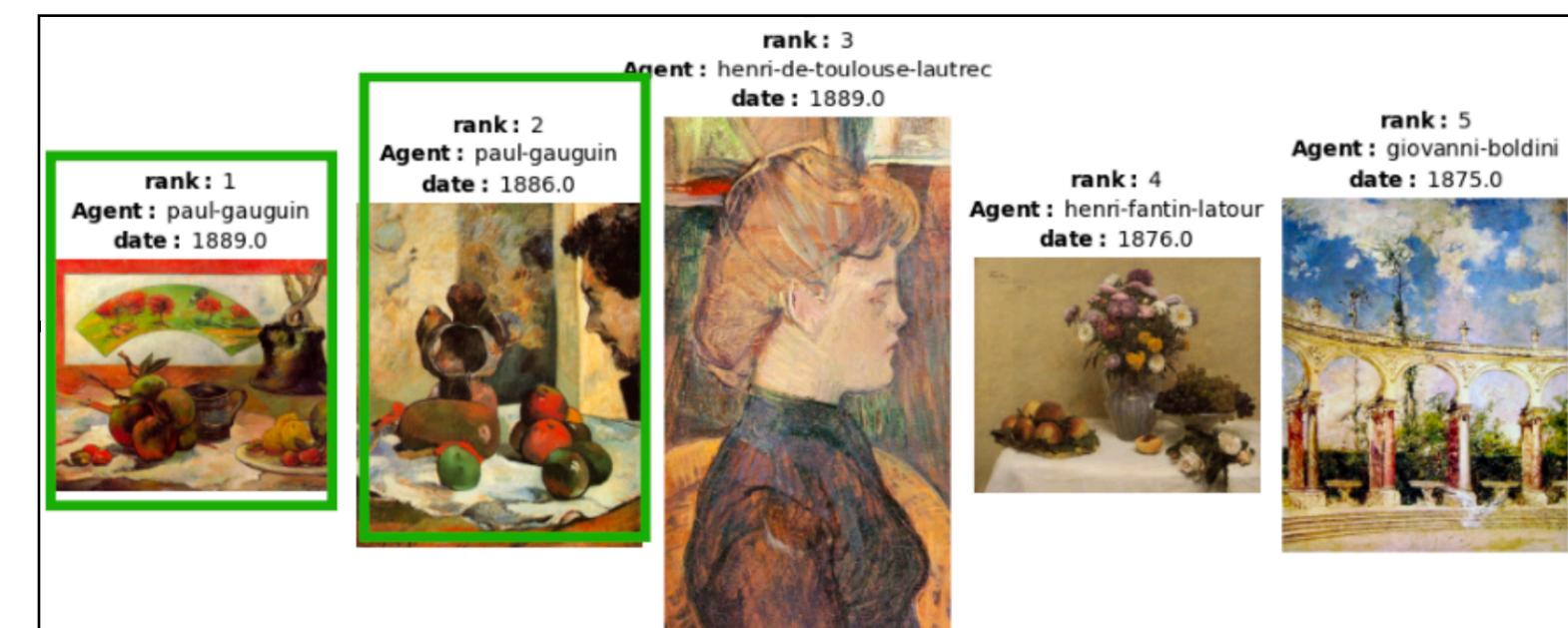
CLOIR



	Sampling & Size	Feature	P@10	MRR
Baseline	-	Image+Text (ResNet+GPT2)	0.1	0.18
CLOIR	Similarity & 100	Image+Text (ResNet+GPT2)	0.41	0.41



Baseline



CLOIR

