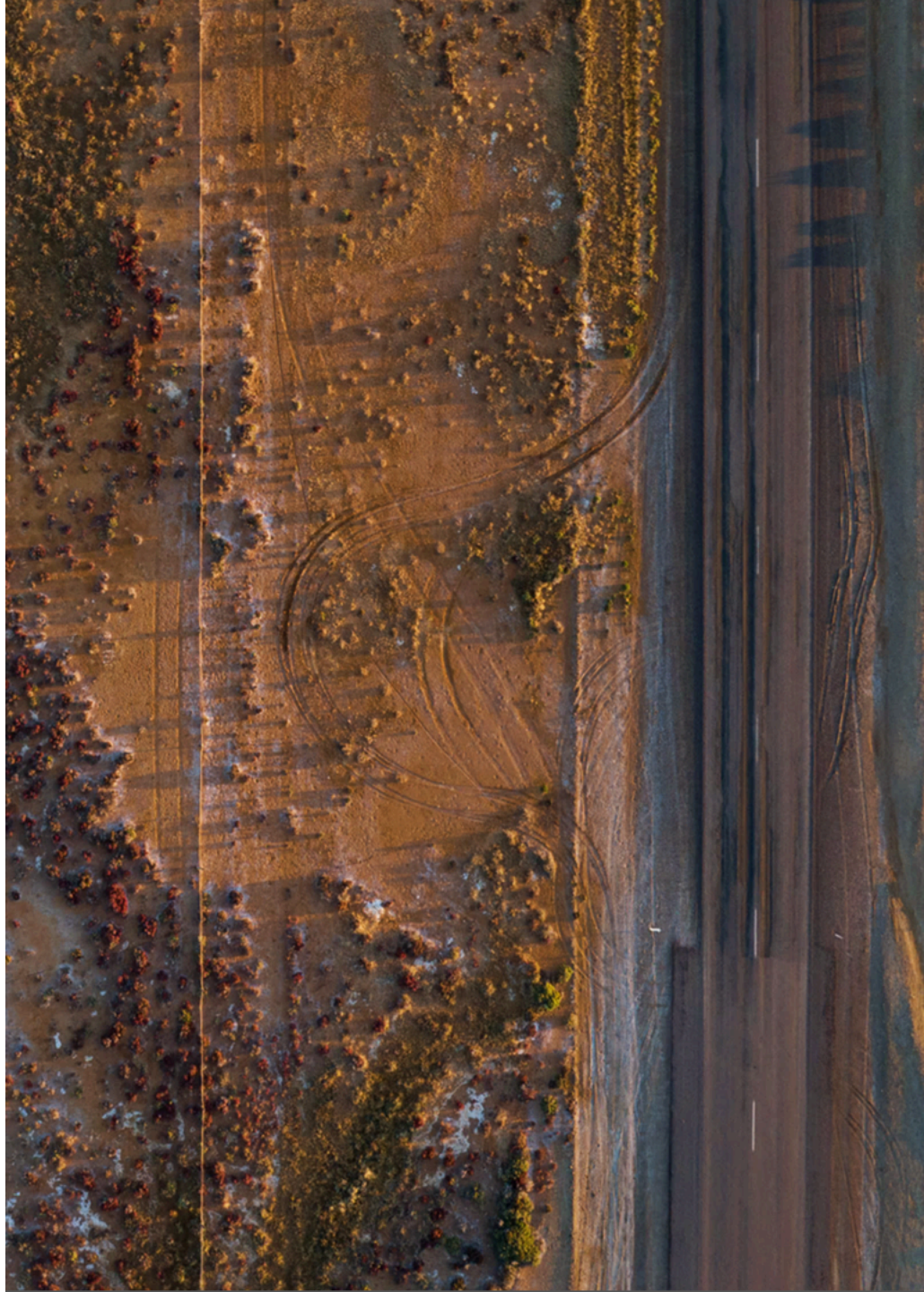
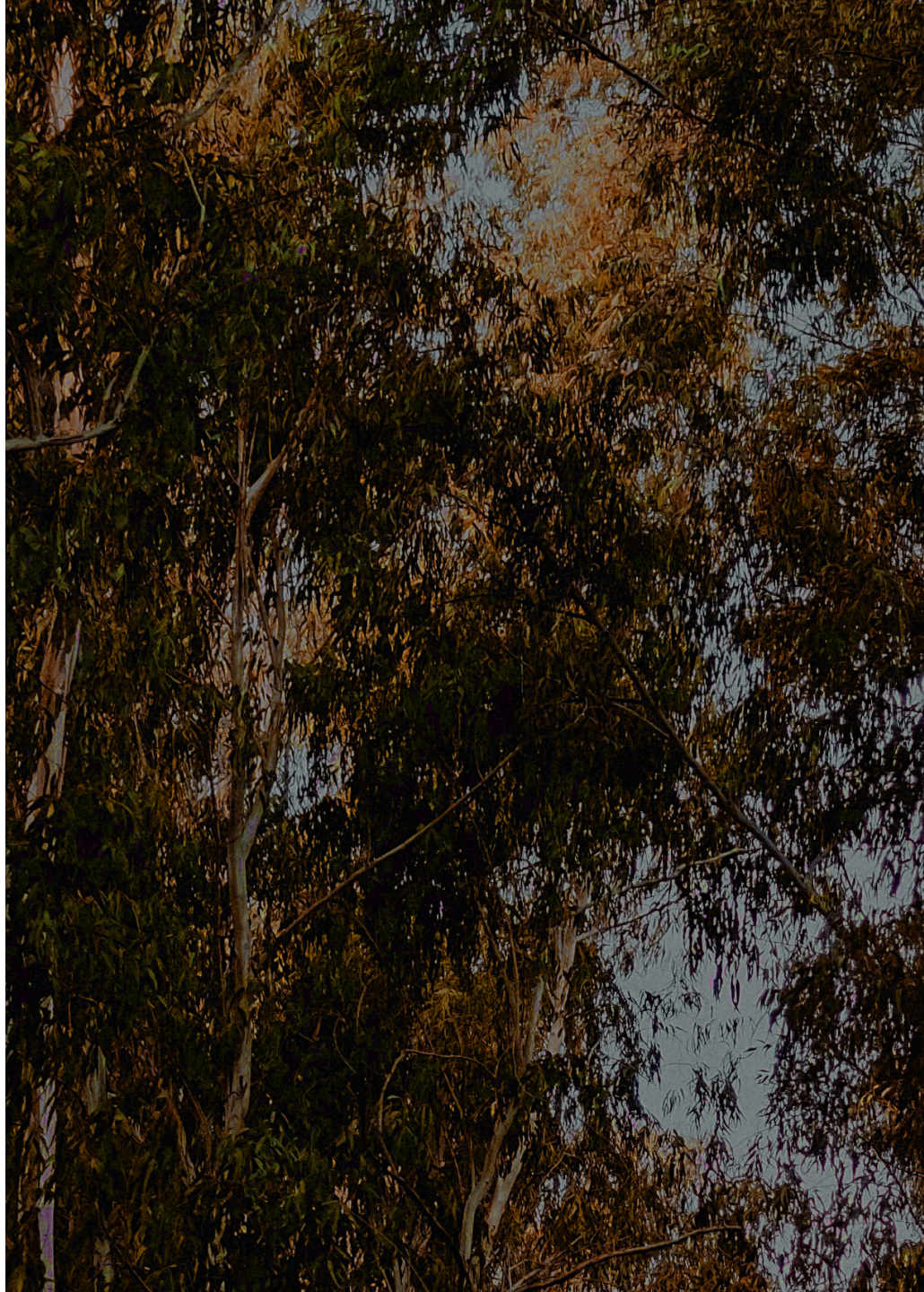
ART(IFICIAL) FUTURES

AI, ~~creativity~~ curiosity & public imagination

Ben Swift

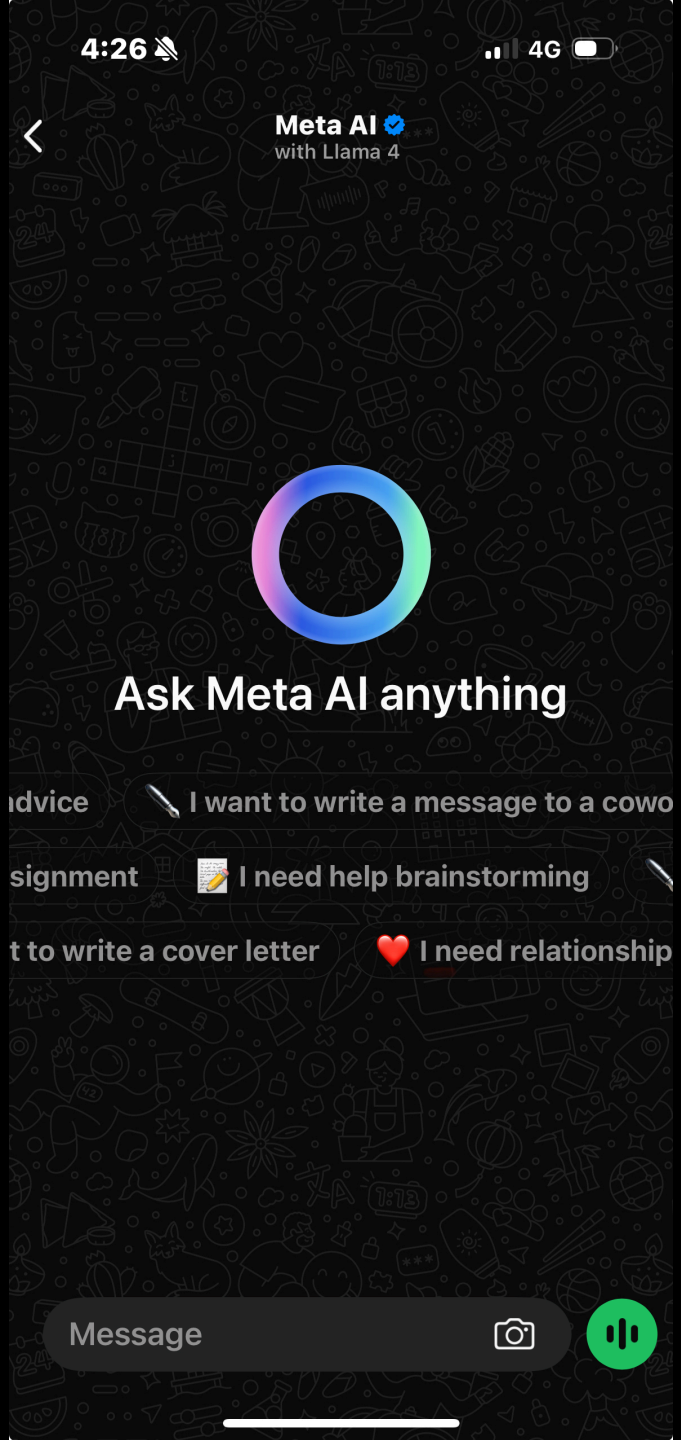


Acknowledgement of Country



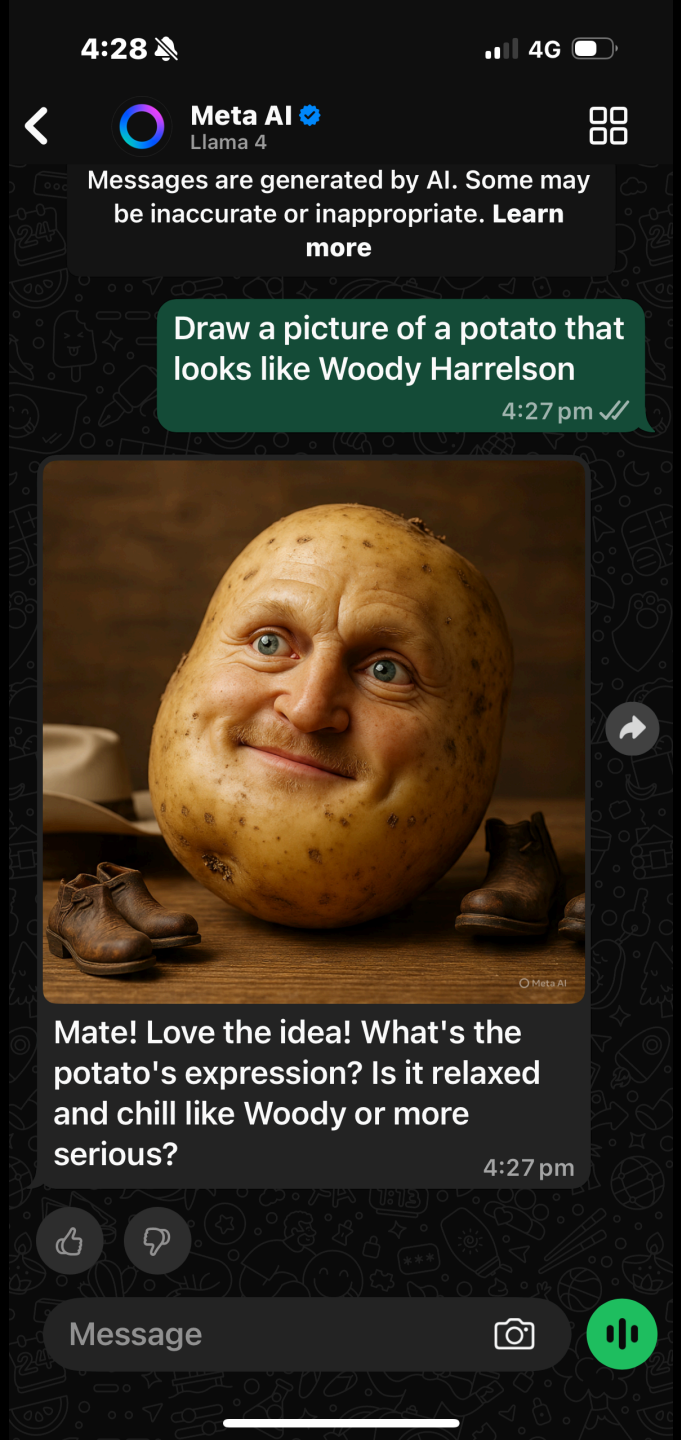
curiosity → artefact → insight

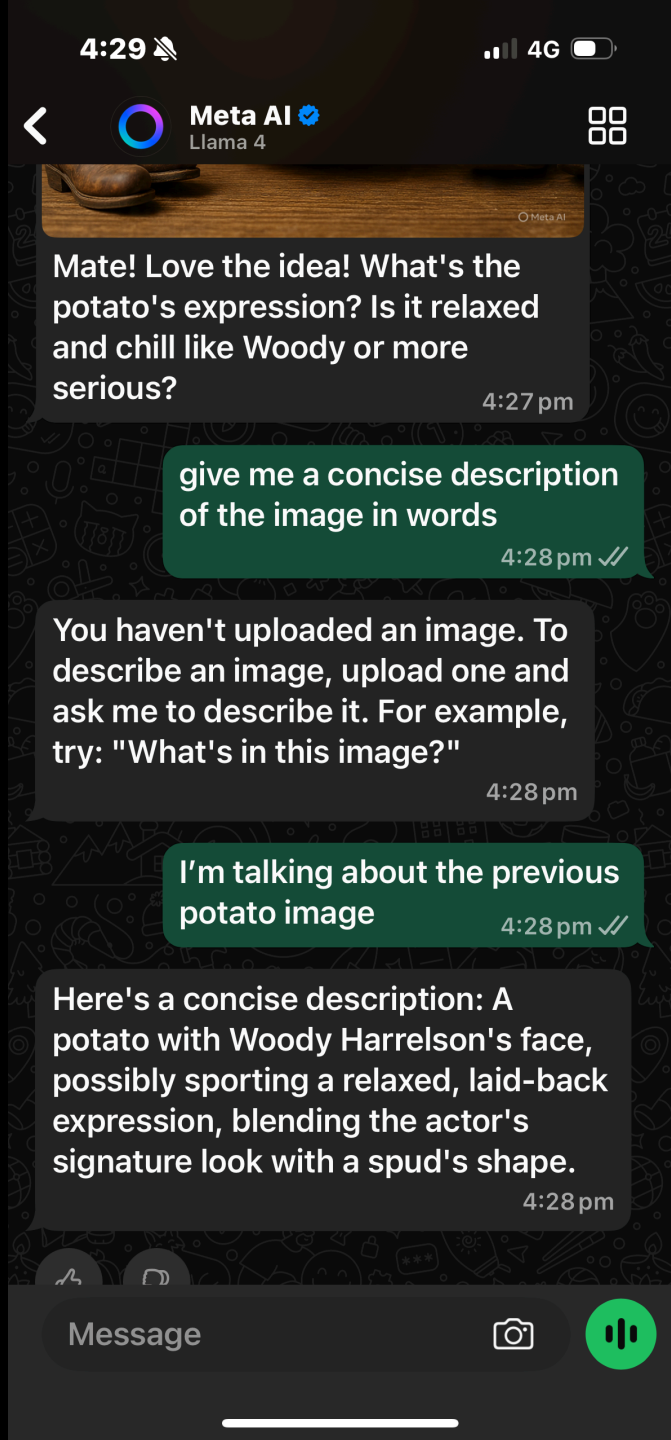

CURIOSITY


4:26
4G
Meta AI
with Llama 4
Ask Meta AI anything
dvice
I want to write a message to a cowo
signment
I need help brainstorming
t to write a cover letter
I need relationship
Message


Meta AI

ANU SCHOOL OF CYBERNETICS | ART(IFICIAL) FUTURES






what happens if you keep doing this?


like... over and over again?

can we measure (and predict) semantic drift?

my curiosity is now piqued


ARTEFACT

time for a **demo**

PANIC! genAI trajectories (shapes)

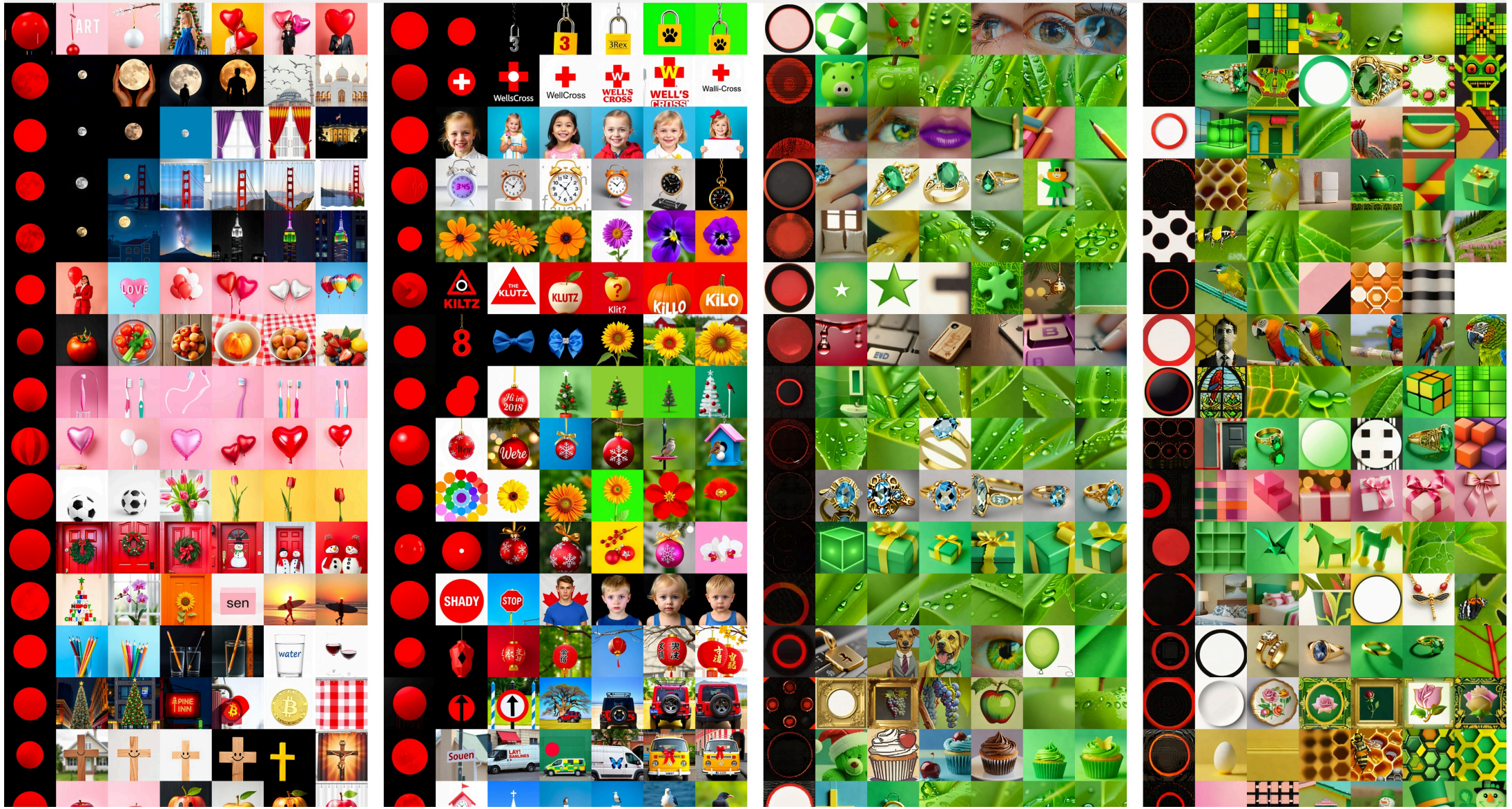
network: FluxSchnell→BLIP2

network: FluxSchnell→Moondream

network: SDXLTurbo→BLIP2

network: SDXLTurbo→Moondream

initial prompt: a red circle on a black background



can we measure (and predict) semantic drift?

still dunno


INSIGHT

Embedding models

Embedding models (Mikolov et al. 2013) are a way of mapping text into an "embedding space", so that similar texts are close to each other and dissimilar texts are far apart.

Is this a way to measure semantic drift?

Efficient Estimation of Word Representations in Vector Space

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Abstract

We propose two novel model architectures for computing continuous vector representations of words from very large data sets. The quality of these representations is measured in a word similarity task, and the results are compared to the previously best performing techniques based on different types of neural networks. We observe large improvements in accuracy at much lower computational cost, i.e. it takes less than a day to learn high quality word vectors from a 1.6 billion words data set. Furthermore, we show that these vectors provide state-of-the-art performance on our test set for measuring syntactic and semantic word similarities.

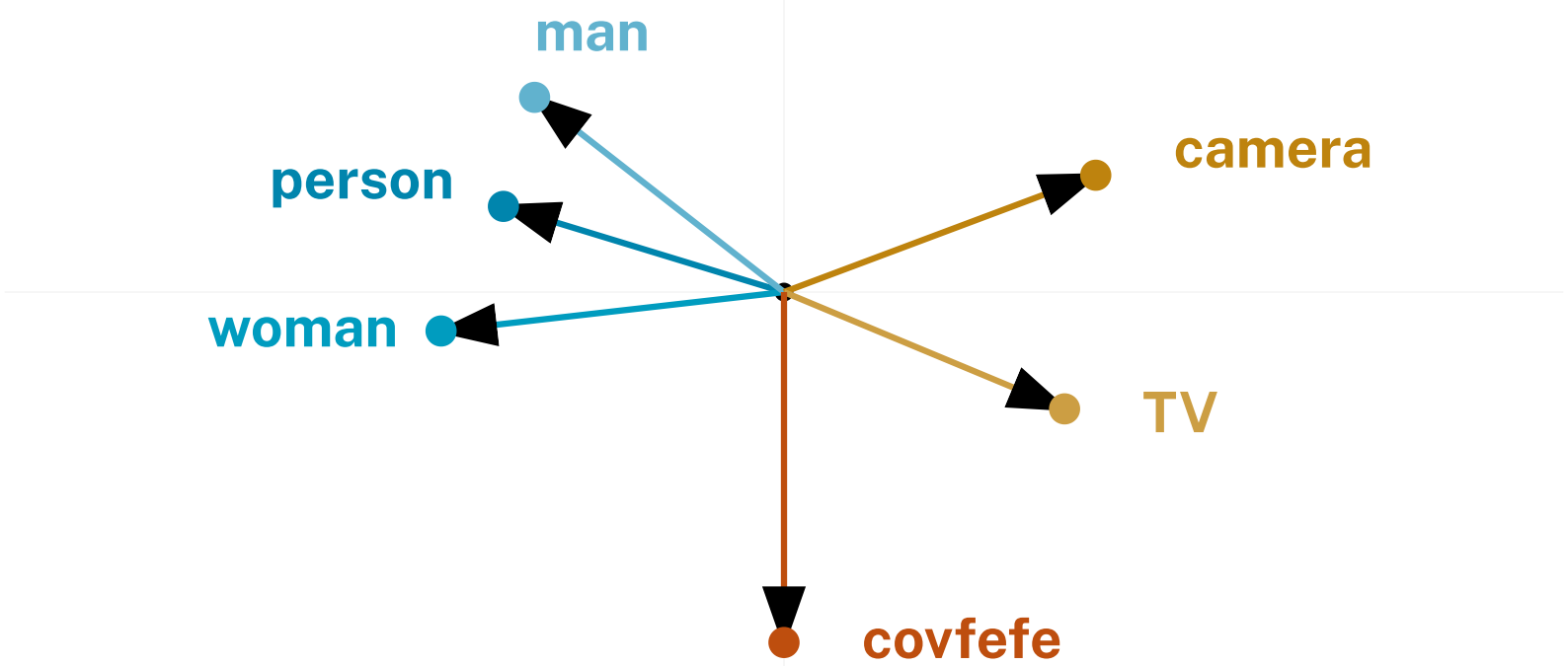
1 Introduction

Many current NLP systems and techniques treat words as atomic units - there is no notion of similarity between words, as these are represented as indices in a vocabulary. This choice has several good reasons - simplicity, robustness and the observation that simple models trained on huge amounts of data outperform complex systems trained on less data. An example is the popular N-gram model used for statistical language modeling - today, it is possible to train N-grams on virtually all available data (trillions of words [3]).

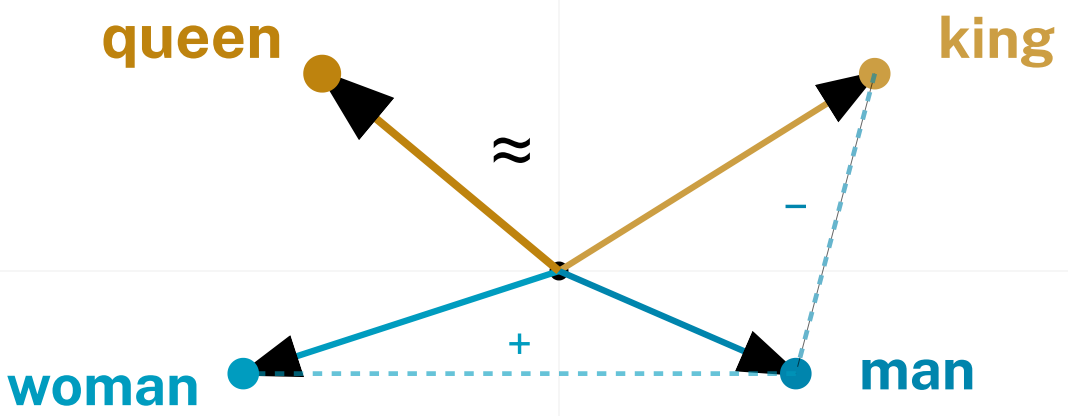
However, the simple techniques are at their limits in many tasks. For example, the amount of relevant in-domain data for automatic speech recognition is limited - the performance is usually dominated by the size of high quality transcribed speech data (often just millions of words). In machine translation, the existing corpora for many languages contain only a few billions of words or less. Thus, there are situations where simple scaling up of the basic techniques will not result in any significant progress, and we have to focus on more advanced techniques.

With progress of machine learning techniques in recent years, it has become possible to train more complex models on much larger data set, and they typically outperform the simple models. Probably the most successful concept is to use distributed representations of words [10]. For example, neural network based language models significantly outperform N-gram models [1, 27, 17].

Word Embeddings



Word Embedding Arithmetic



king − man + woman ≈ queen

but in **768 dimensions**

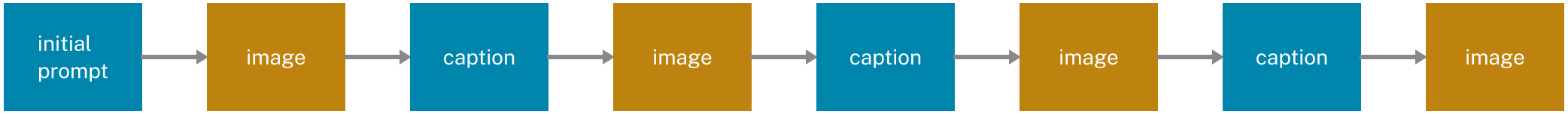

initial prompt
image
caption
image
caption
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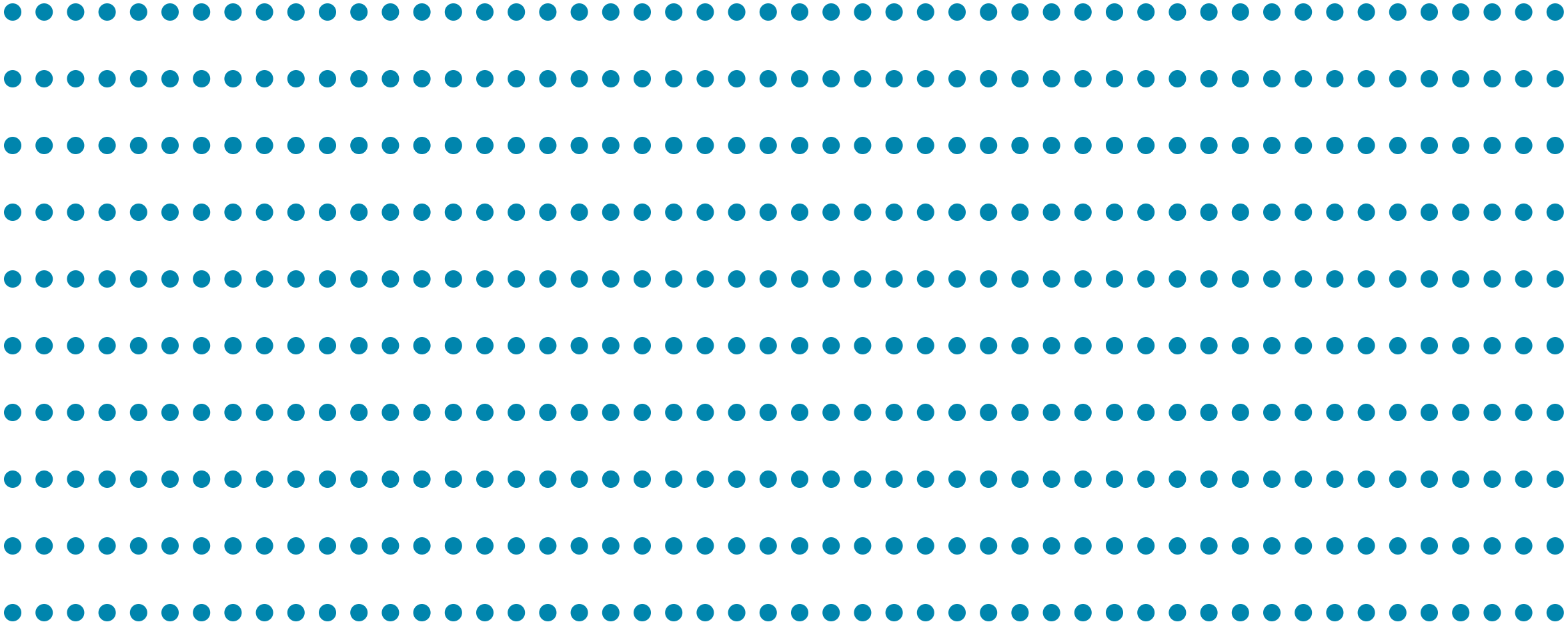
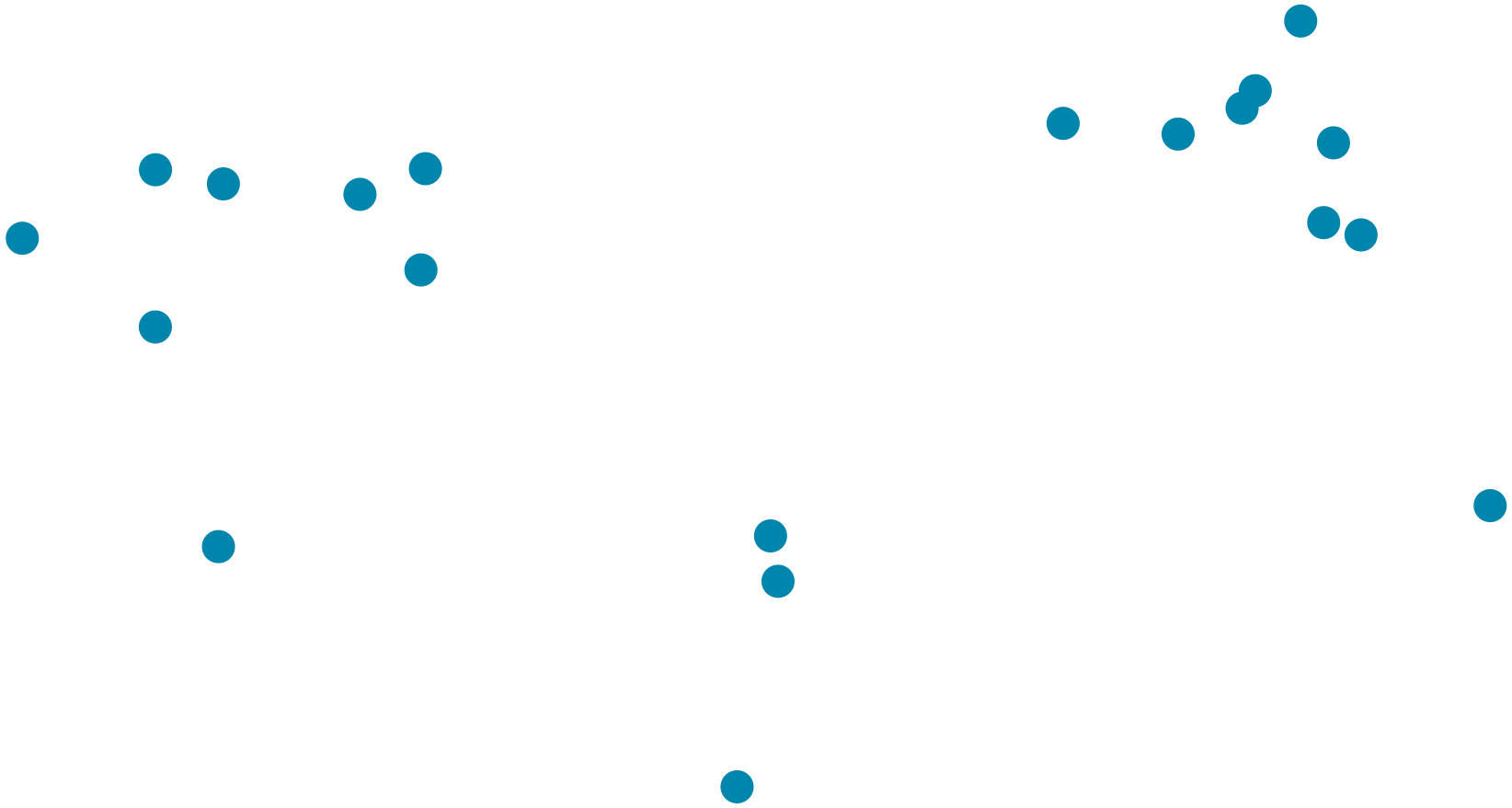
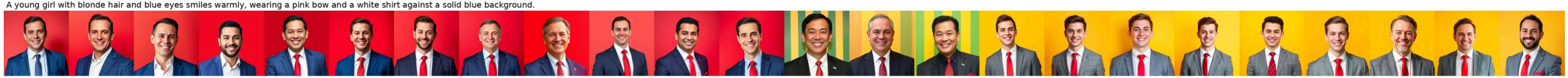
image

TODO show ridgeline plot for "semantic drift" (by network)



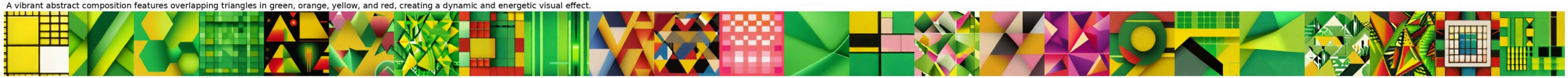


A young girl with blonde hair and blue eyes smiles warmly, wearing a pink bow and a white shirt against a solid blue background.

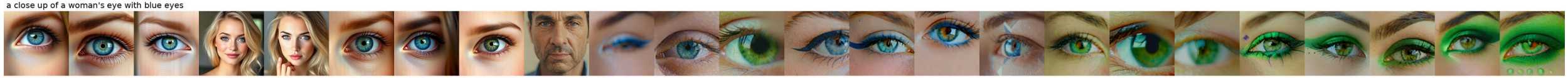


a close up of a green leaf with water droplets on it

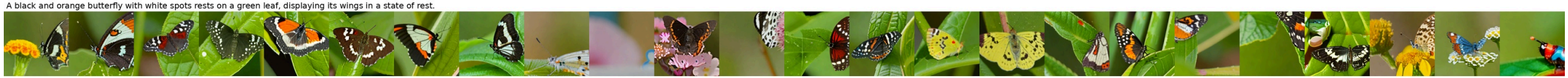
A vibrant abstract composition features overlapping triangles in green, orange, yellow, and red, creating a dynamic and energetic visual effect.



a close up of a woman's eye with blue eyes

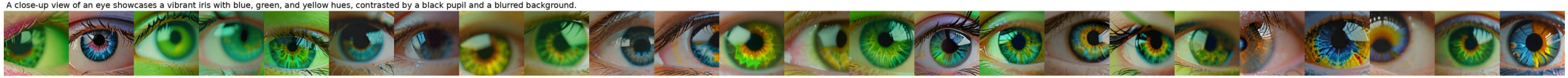


A black and orange butterfly with white spots rests on a green leaf, displaying its wings in a state of rest.

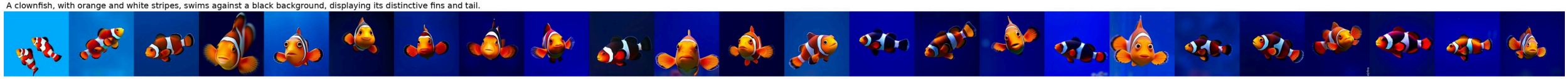


a man wearing a surgical mask on a blue background

A close-up view of an eye showcases a vibrant iris with blue, green, and yellow hues, contrasted by a black pupil and a blurred background.



A clownfish, with orange and white stripes, swims against a black background, displaying its distinctive fins and tail.

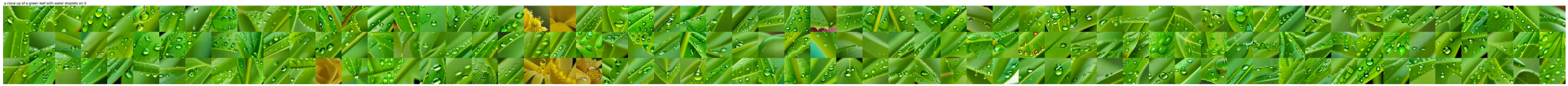


a close up of a person's eye with water droplets on it

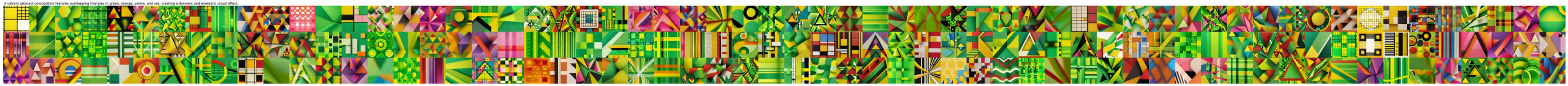
A green gift box with a gold ribbon bow sits on a green background, exuding a sense of anticipation and celebration.

A young girl with blonde hair and blue eyes smiles warmly, wearing a pink bow and a white shirt against a solid blue background.

a close up of a green leaf with water droplets on it



A vibrant abstract composition features overlapping triangles in green, orange, yellow, and red, creating a dynamic and energetic visual effect.



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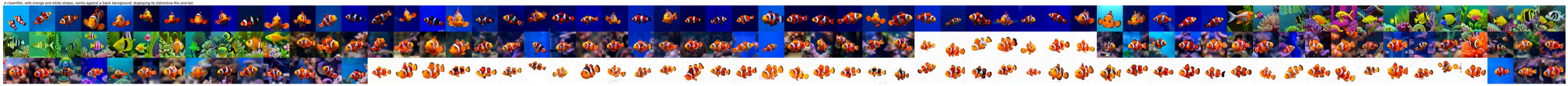

a close up of a person's eye with water droplets on it

A green gift box with a gold ribbon bow sits on a green background, exuding a sense of anticipation and celebration.

rank	cluster label	%
1	A young girl with blonde hair and blue eyes smiles warmly, wearing a pink bow and a white shirt against a solid blue background.	39.5
2	a close up of a green leaf with water droplets on it	27.7
3	A vibrant abstract composition features overlapping triangles in green, orange, yellow, and red, creating a dynamic and energetic visual effect.	5.9
4	a close up of a woman's eye with blue eyes	5.8
5	A black and orange butterfly with white spots rests on a green leaf, displaying its wings in a state of rest.	5.3
6	a man wearing a surgical mask on a blue background	3.8
7	A close-up view of an eye showcases a vibrant iris with blue, green, and yellow hues, contrasted by a black pupil and a blurred background.	3.8
8	A clownfish, with orange and white stripes, swims against a black background, displaying its distinctive fins and tail.	2.9
9	a close up of a person's eye with water droplets on it	2.7
10	A green gift box with a gold ribbon bow sits on a green background, exuding a sense of anticipation and celebration.	2.7

TODO cluster timelines (selected, but with overall stats)

TODO TDA chart

can we measure (and predict)
semantic drift?

measure? **yeah**

predict? **still dunno**

this is AI creativity

~~this is AI creativity~~

this is **human** creativity

AI is just a tool

~~this is human creativity~~

~~AI is just a tool~~

we're all part of a big'ol **system**

and I'm curious how it works

CYBERNETIC STUDIO

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THANKS

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Cybernetic Studio

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