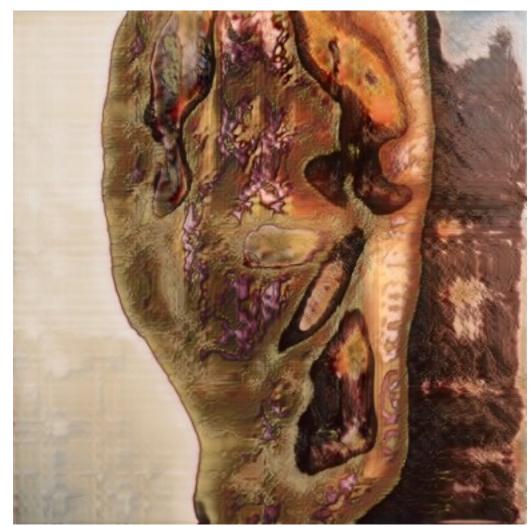
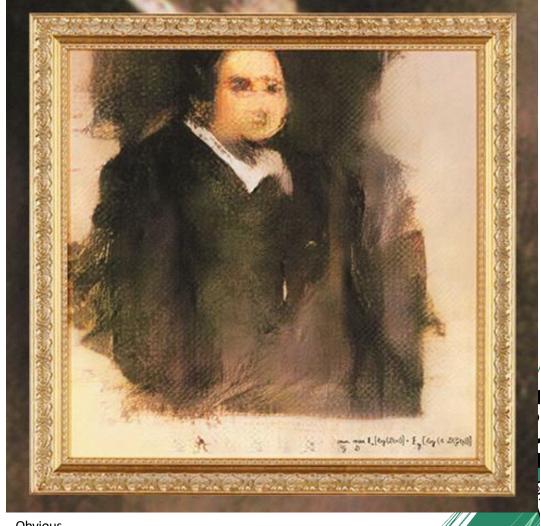


### ENARIS Is this art?



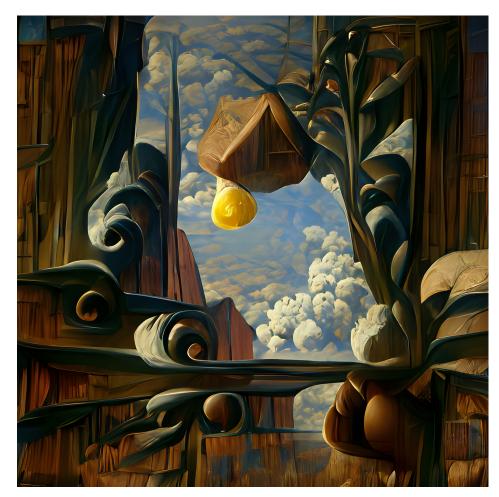
Robbie Barrat Nude Portrait #7 Frame #64



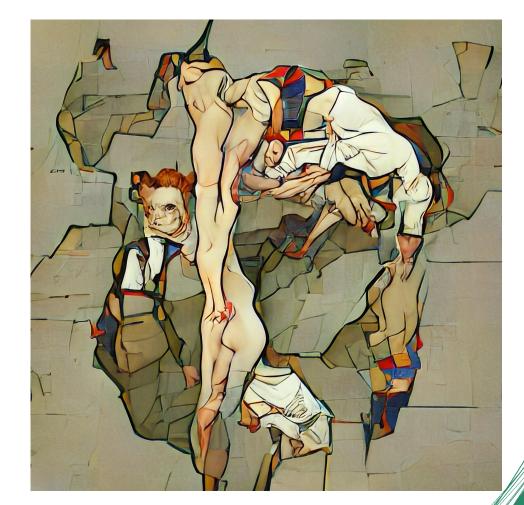
Obvious Edmond de Belamy



### ENARIS Is this art?



Botto Heighten While



Botto Asymmetrical Liberation



None of these paintings were painted by a human, but created by an artificial intelligence!

So can an artificial intelligence be an artist?





# Can Al do art?

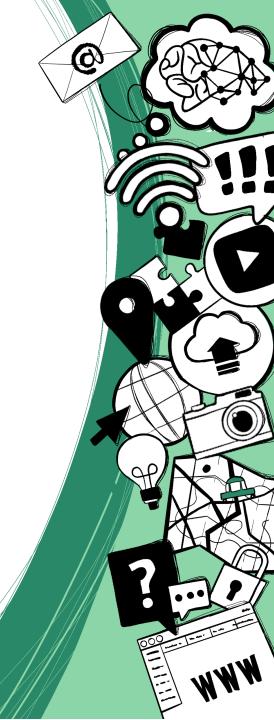














### **Exercise: What is art?**

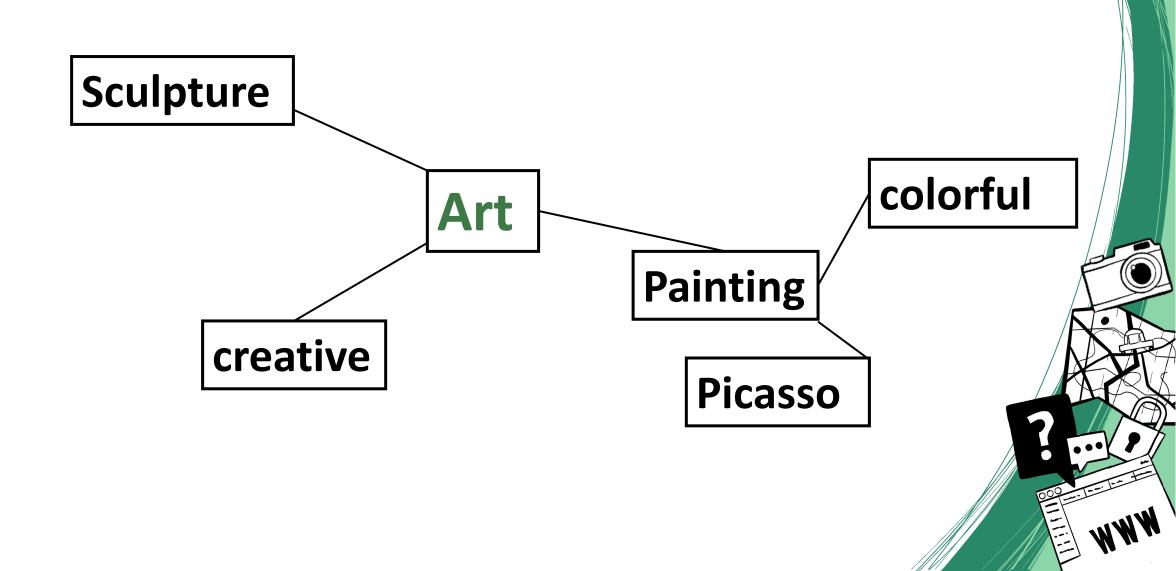
 Use post-its or digitally with miro.com to create a mind map in small groups about the term "art"

2. Write down **everything** you can think of!

3. Try to come up with a definition using these terms.

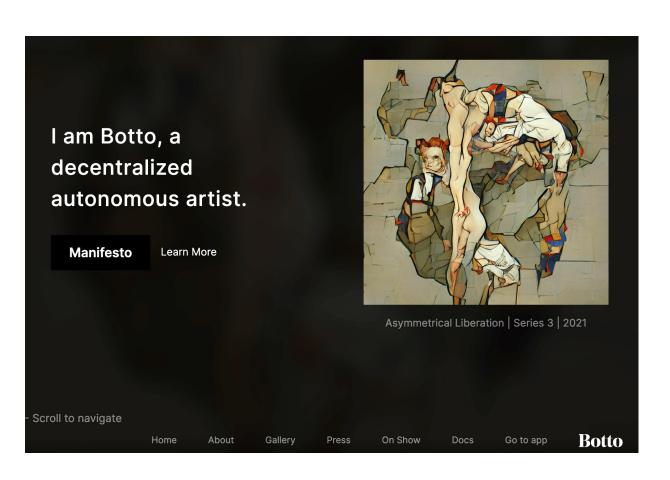


# ENARIS Mind-Map: What is art?





### Botto, the Art-Al



#### **Exercise:**

Visit **Botto's website** and see the Al's artwork.

Together with your partner, **choose a painting** that you would describe as "art."

https://www.botto.com/



### Who is the artist?

 Al systems as tools, partners, muses...

E.g. Musician Holly Herndon produces music together with her Al "Spawn"

https://www.youtube.com/watc h?v=rvNqNgHAEys&ab\_channel =HollyHerndon



Quelle: https://www.theguardian.com/music/2019/may/02/holly-herndon-on-her-musical-baby-spawn-i-wanted-to-find-a-new-sound





Robbie Barrat sold his work "Nude Portrait#7Frame#64" for 753,700 euros.



The artist collective Obvious sold their work "Edmond de Belamy" for 426,800 euros





AI-Softwares (Examples in the links!)

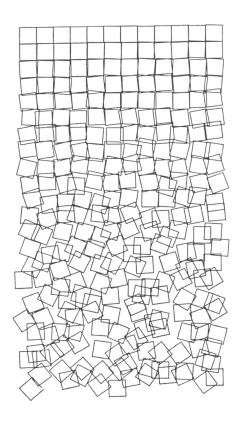
- complete unfinished works by <u>Beethoven</u> and <u>Schubert</u>
- write entirely new <u>Harry Potter chapters</u>
- Write <u>love poems</u>
- Create entirely new <u>fantasy characters</u>

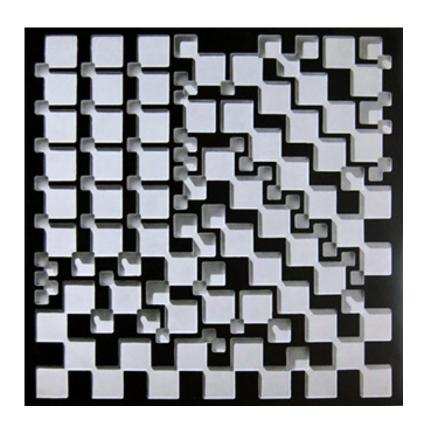




# ENARIS Can only humans be creative?

 Computer generated art has been around since the 1960s





Works by the German artist Georg Nees





 A new movement has emerged in the art world through the use of AI, redefining creativity and authorship.

#### Discuss in small groups!

- Is creative design a unique selling point of humans or can Als be creative too?
- Can AI even replace the creativity of humans or humans as artists?





 Whether it's possible that an AI creates art is controversial.

On the one hand, art can be viewed as something **human-made**, on the other hand, art can also be viewed from the point of view of the audience and thus something is art as soon as it **touches us emotionally** (regardless of who the author is  $\rightarrow$  also an AI).



### ENARIS How do these programs work?

# Example 1: GAN ("Generative Adversarial Networks")

two competing systems: generator and discriminator

- Generator creates new data (e.g. images)
- Discriminator tries to distinguish the data generated by the generator from the learning data and recognize it as artificially generated.
- constant interaction
- the system learns independently and thus develops ever more realistic images



# How do these programs work?

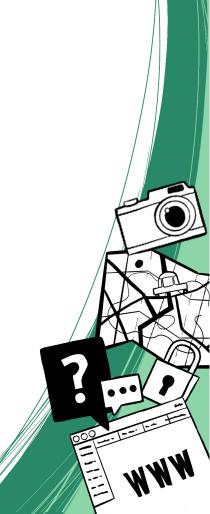
- Example 2: Transformers
- neural networks
- individual pixels or syllables are placed in connection with the others
- For example, the system may learn to associate the word "eat" with "food" or "breakfast," or recognize certain repetitive motifs in pieces of music or images that it can then reapply



## How do these programs work?

#### **Examples**

- Animate photos of people or objects
- Colorize black and white films or pictures afterwards
- Create completely new pictures of people
- Make people in pictures older or younger
- Make pictures out of text
- Turn photos into classic paintings
- Write a whole essay from keywords
- And many more!





### Now who is the artist?

 "Edmond de Belamie": in which one of the first works of art "that was not created by a human being, but independently by a machine."

• Earned money did not go to the AI, but to the artist collective "**Obvious**", which trained the program with data. The programming team that wrote the program received no money

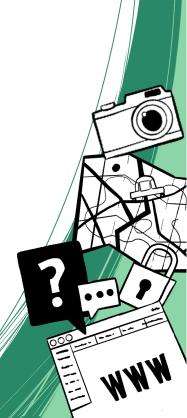


### Now who is the artist?

 Countless people are involved in the development of artificial intelligence

 Artists and curators, programmers and sometimes the audience themselves

But who created the artwork in the end?





### Now who is the artist?

 Whose name should be under the picture? Who are the authors?

 Should the work of art state that it was not made by a human being?

• Who owns the artwork?

The program? Or should the copyright remain with the programmers, artists or clients?