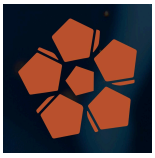


ART ^ NEUROSCIENCES

SEED 17 - GANsensus

0. CONTACT DETAILS

0.1 Surname and first name: Cristina Rubio Escudero

0.2 Contact e-mail address: crubioescudero@yahoo.es

0.3 Let us get to know you a little bit through your participation in websites, blogs, social networks, etc.

I don't do much on networks or websites.

0.4 What is your background and in which institution do you work?

I have a PhD in Computer Engineering, and I am a professor at the University of Seville.

0.5 Gender: Female

0.6 Age range: 41 - 60 years old

1. ESSENTIAL DIMENSION

1.1 Seed name

GANsensus.

1.2 Seed summary

GANsensus explores the convergence between artificial intelligence and neuroscience, creating learning models inspired by the neuroplasticity of the human brain. This approach looks at how the human brain processes information, allowing systems to learn and recognize patterns by creating generative art based on patterns learned from various artistic currents.

Below we show images of some works generated by GANs:

1.3 Metaphor. *Is there any metaphor that helps to explain this seed in a more intuitive way? An imaginative text can inspire as much as a poem.*

In the vast universe of neural networks, GANs (Generative Adversarial Networks) operate like a brain that does not stop reinventing itself. As well as the neurons of the human brain, with their ability to reorganize and strengthen connections in response to new stimuli, as well as to create new knowledge. GANs and the brain learn dynamically, constantly adapting to the data patterns that are presented to them. The neuroplasticity of the human brain inspires GANs to explore a continuous cycle of trial and error, where each iteration is a new opportunity to strengthen their visual "memory", learning from artistic patterns and styles to create something completely new, reflecting the infinite capacity for transformation of the human brain.

This poem speaks of the immensity of the brain.

"The Brain is wider than the Sky"
(Emily Dickinson)

The Brain is wider than the Sky—
For—put them side by side—
The one the other will include
With ease—and You—beside—

The Brain is deeper than the Sea—
For—hold them—Blue to Blue—

The one the other will absorb—
As Sponges—Buckets—do—

The Brain is just the weight of God—
For—Heft them—Pound for Pound—
And they will differ—if they do—
As Syllable from Sound—

1.4 Keywords (separated by commas)

Neuroplasticity, Artificial Intelligence, Brain-inspired Computing, Artificial Neuronal Networks, Generative Adversarial Networks.

1.5 Scientific field (general)

Computer Science and Neuroscience

1.6 Scientific subfield (specific)

Artificial Neural Networks and Generative Adversarial Networks

1.7 Resources (File)

1.8 Resources (Links)

https://panopticon.am/what-is-generative-adversarial-networks-gan-art/
https://www.youtube.com/watch?v=vIdUES0cSwI
https://www.youtube.com/watch?v=5__CDJvbWbc
https://www.youtube.com/watch?v=XkJjxgRrL70

2. ADDITIONAL DIMENSIONS

2.1 SYNAESTHETIC DIMENSION

This dimension seeks to associate certain sensory characteristics to the seed.

2.1.1 What colours does this seed suggest to you?

Green and blue tones symbolize growth and connection.

2.1.2 What sounds or music does this seed inspire you?

Nature sounds or electric pulses, with a classical melody in the background based on piano or cello.

2.1.3 What aromas would you associate with this seed?

Fresh and natural aromas, rain on a grassy field.

2.1.4 What flavours does this seed evoke in you?

Citrus flavors that evoke freshness and novelty.

2.2 EMOTIONAL DIMENSION

This dimension seeks to explore the personal meaning of the seed.

2.2.1 What was your motivation to dedicate yourself to this field of research? What personal reasons lead you to suggest this seed?

The motivation was to learn about the immense capacity that this technology has and its direct application to society. An algorithm trained by people can create new knowledge.

It seems to me that during the generative AI revolution, it is a very attractive topic.

2.2.2 What metaphysical reflections does this seed provoke in you?

The greatness of the human being, capable of replicating the functioning of an organ such as the brain, which we do not even fully understand, but we can replicate.

2.2.3 What ethical reflection or challenges would you associate with this seed?

For society to understand that Artificial Intelligence is not good, or bad, nor will it have a life of its own. It is simply a tool in the hands of man, which will be good or bad depending on how people are.

2.2.4 What aesthetic dimensions does this seed suggest to you?

1. Visual style: Neural neo futurism with generative patterns and neural connections.
2. Color palette: Blues, turquoises, neon and warm touches such as orange and yellow.
3. Sound style: Electronic algorithms and biomorphic sounds.
4. Art style: Digital surrealism that fuses the organic and the artificial.
5. Concept: Cycle of continuous evolution, adaptation and change.

2.3 PROCEDURAL DIMENSION

This dimension seeks to explore the scientific processes that are usually followed when investigating this topic.

2.3.1 Description of the research process

Generation of motivated interest with artistic examples (GANs applied in art and music)

- Show examples of art generated with GANs (imitations of great artists, contemporary art).
- Listen to music created by GANs (e.g., compositions in the style of classical composers).
- Examples of GANs finishing unfinished symphonies or creating new works in existing genres.

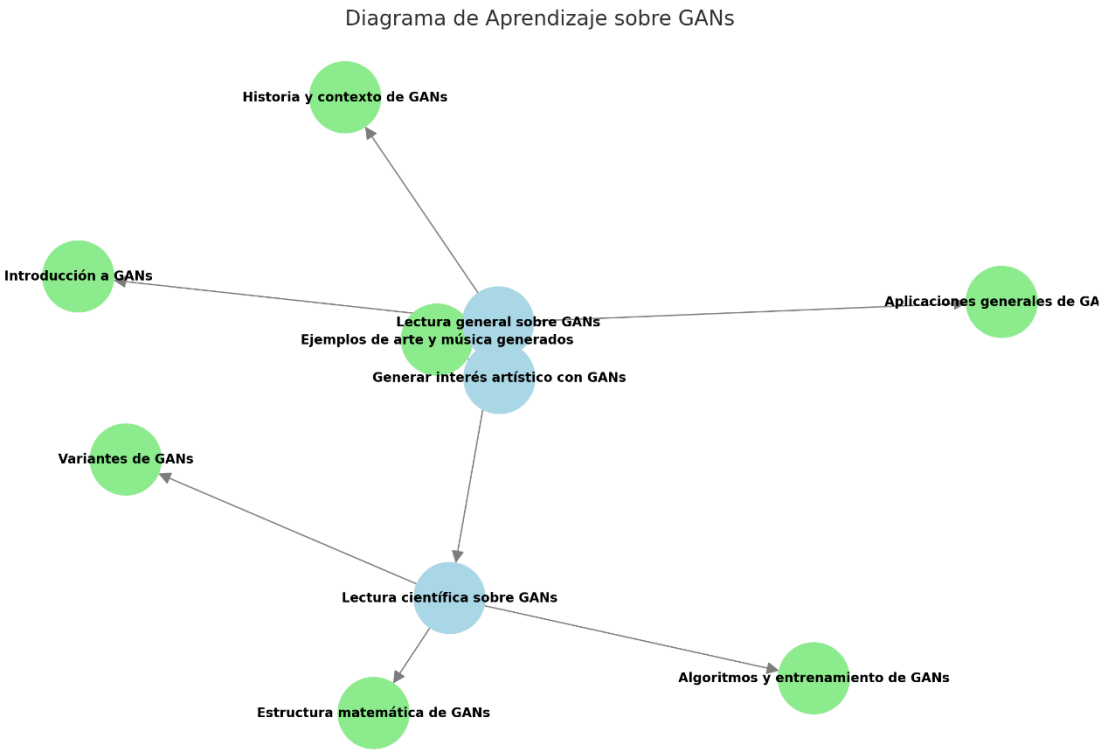
Reading general documentation on GANs

- Introduction to technology: What are GANs and how do they work in a basic way?
- General applications of GANs: in art, music, video games, text generation, etc.
- History and context: From initial advances to their relevance in modern AI.

More scientific and technical reading on GANs

- Mathematical structure of GANs (loss functions, generating and discriminating networks).
- Variants of GANs (DCGANs, StyleGAN, CycleGAN, etc.).
- Algorithms and training architecture.

2.3.2 Research process diagram



2.3.3 Link to the descriptive video of the process

2.3.4 What tools are typically used in this field of research? Whether instruments, technologies, hardware or software.

3. PERSONAL SUGGESTIONS

The following ideas come to mind:

- To explore how GANs can represent the cognitive evolution of the human being, from early learning to the complexities of contemporary thought. This could be reflected in a series of works that show a journey from simple patterns to complex and abstract structures.

- Creation of an interactive installation where the visual patterns generated by GANs change in real time in response to the viewer's movements, simulating how the brain adapts to new stimuli.

- Imagine a sound composition generated by neural networks that mixes biomorphic sounds with electronic algorithms. This work could be presented as an immersive auditory experience that reflects the internal learning processes of a neural network.

- Creative Process Exhibition: An installation that not only shows the final works but also the learning process of the GANs, with real-time visualizations of how networks generate and modify patterns.

- Organic-Digital Fusion: Suggests an artistic style that combines visual elements of the organic (nature, biology) with the digital (computer-generated graphics), representing the synthesis of artificial intelligence and neuroscience.

- The Consciousness of Machines: Propose a work that invites reflection on the ethical implications of autonomous learning and artistic creation by machines, exploring questions about authorship, creativity and identity.

4. INVOLVEMENT OF THE SCIENTIST ON THE CREATIVE TEAM

4.1 What role would you like to have in the process of co-creating the SciArt work?

Participate punctually in the conceptual discussion and co-creation of work.