

## **Officine artificiali. The museum in the creative processes behind AI generated images**

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Digital creativity, fuelled by widespread access to generative text-to-image models such as Dall-E and Midjourney (Anantrasirichai & Bull 2020), is supported by the growing development of the digital museum concept (Schweibenz 1998; Cameron 2015). This umbrella term encompasses semantic and standardized models for the visualization and acquisition of descriptive metadata about collections (Manovich 2011), including: new policies for accessing and sharing of information; the strategies for communication and interaction between the user-visitor and the museum-digital environment (Debono 2021); the adoption of languages and formats taken from gaming contexts to stimulate interactivity through virtual, augmented, or mixed reality techniques (Kenderdine 2021); the application of neural technologies that combine computer vision and machine learning for facial recognition and analysis of artworks (Snimen, Steels 2021). This multimedia landscape drives visitors to become embodied in the museum environment (Kenderdine 2015) as an extended place and not just a medium for accessing knowledge. The most digitally active museums have focused their strategy on the role of visitor-artwork interaction in activating cognitive processes based on co-creation mechanisms. User Generated Content relies on resources and applications to creatively relate and interpret the images of the artworks provided by the museum (Bertacchini et al 2012; Giannini, Bowen 2019). In this context, the algorithms of generative Artificial Intelligence (Goodfellow et al. 2014) are positioned as tools that, with a decisive boost from 2020, have become popular in museums, which have adopted them for educational purposes, encouraging their visitors to approach and rethink works of art through personalised prompts (Boden 2009). *Extend the Art* and the Cleveland Museum of Art's *ArtLens for Slack* are applications that aim to protect the authorship of works of art, stimulate creativity, and help the development of computer skills by generating prompts for text-to-image algorithms from images of artworks that are open access and in the public domain. This trend to remake artworks, already explored by Generative Art and AI Art (Kligemann 2020), thus finds in museums the drivers of human creativity, directing the massive collection and

availability of data resulting from digitization strategies toward a process of reconceptualizing creativity itself.

The paper aims at examining experimental approaches to the use of generative AI algorithms in museums, to explore the new relationship between image and text that has always been present in the history of art. It discusses models that move away from purely mimetic image generation to reflect on how prompts are written, given the limitations of AI models and their difficulty in returning subtle clues about concepts and meaning (Danesi 2022). Considerations will also focus on how the user's creativity affects the process of generating and selecting the output image (Franceschelli & Musolesi 2024); the importance of human agency and intentionality in assigning deep meaning to the resulting images as a meditation on the referential artwork; and finally, the capacity of the individual to adapt to new writing processes, as well as the AI systems to the user and his or her intentionality.

## Bibliography

ANANTRASIRICHA, N., & BULL, D. (2020). Artificial intelligence in the creative industries: a review. *Artificial Intelligence Review*, 55, 589 - 656.

BERTACCHINI, E., ET AL. (eds.) (2012), *Cultural Commons: A new perspective on the production and evolution of cultures*, Cheltenham, Edward Elgar Publishing.

BODEN, M. (2009), *Computer models of creativity*, in "AI Magazine", 30, 3, pp. 23-34.

CAMERON, F. (2015), *The Liquid Museum: New Institutional Ontologies for a Complex, Uncertain World*, in The International Handbooks of Museum Studies.

Danesi, M. (2024), *AI-Generated Popular Culture. A Semiotic Perspective*. Palgrave McMillan.

DEBONO, S. (2021), *Thinking Phygital: A Museological Framework of Predictive Futures*, in "Museum International", 73, 3-4, pp. 156-167.

FRANCESCHELLI, G. & Musolesi, M. (2024), On the creativity of large language models. *AI & Society*.

GIANNINI, T., BOWEN, J. T. (eds.) (2019), *Museum and Digital Culture. New Perspective and Research*, Springer, Berlin.

GOODFELLOW, I., et al. (2014), *Generative Adversarial Nets*, in Z. Ghahramani, et al. (eds.), *Advances in Neural Information Processing Systems 27 (NIPS 2014)*, Proceedings, Curran Associates, Red Hook, pp. 2672-2680.

KENDERDINE, S. (2015), *Embodiment, entanglement, and immersion in digital cultural heritage*, in *A new companion to digital humanities*, 22-41.

KENDERDINE, S. (2021), *Experimental museology: immersive visualisation and cultural (big) data*, in *Experimental Museology* (2021), p.15.

KLIGEMANN M. (2020), *Imposture series*, in Barale 2020, pp. 89-96

MANOVICH, L. (2011), *Media Visualization: Visual Techniques for Exploring Large Media Collections*, in "Media Studies Futures", pp. 1-21.

SCHWEIBENZ, W. (1998), *The 'Virtual Museum': New Perspectives for Museums to Present Objects and Information Using the Internet as a Knowledge Base and Communication System*, in H. Zimmermann, V. Schramm (eds.), *Knowledge Management und Kommunikationssysteme, Workflow Management, Multimedia, Knowledge Transfer*. Proceedings des 6. Internationalen Symposiums für Informationswissenschaft (ISI 1998), Prag, 3-7 November 1998, UVK Verlagsgesellschaft mbH, Konstanz, 1998, pp. 185-200.

SINEM, A., STEELS, L. (2021), *Identifying Centres of Interest in Paintings Using Alignment and Edge Detection. Case Studies on Works by Luc Tuymans*, in A. Del Bimbo et al., *Pattern Recognition. ICPR International Workshops and Challenges. Virtual Event, January 10-15, 2021, Proceedings, Part III*, Springer, Berlin, pp. 589-603.