



**INFORMATICS  
INSTITUTE OF  
TECHNOLOGY**

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

# **ArtZen**

**A Self-supported Art Therapy System Utilizing Text-to-image  
Synthesis for Affective Emotion Expression**

A dissertation by

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## ABSTRACT

The current practices of Art Therapy consist of several unavoidable complications. Age group, severe mental health conditions, personality disorders, and demography are some of the major reasons that these problems differ from one another. When integrating art therapy into a school system, maintaining confidentiality and privacy, availability of suitable, peaceful space and enough art supplies to create art, and time constraints restrict the potentiality to provide the maximum therapeutic experience for students. People who suffer from critical mental health conditions such as Depression, Anxiety, and PTSD may struggle to express their emotions due to their complexity. Introverts may feel overwhelmed to open up to a stranger, and people who experience imposter syndrome or low self-esteem may feel insecure about their artistic abilities. The high cost of therapy sessions and the limited schedule also contribute to the fact that people avoid art therapy.

As a solution to these issues, ArtZen incorporates the entire art therapy experience inside the application by leveraging the text-to-image synthesis capability of Generative Adversarial Networks.

So far, the system is capable of creating artworks based on text prompts that visualise the colours, main theme of the art, and art media.

**Keywords:** Data Science, Computer Vision, Generative Adversarial Networks, Text-to-image synthesis, Art Therapy

### Subject Descriptors:

- Information Systems → Models and Principles → User/Machine Systems → Human Information Processing
- Computing Methodologies → Artificial Intelligence → Applications and Expert Systems → Medicine and Science
- Computing Methodologies → Computer Vision → Image Representation