

# Evolutionary Art

No Institute Given

**Abstract.** <Text of the summary of your article>

## 1 Introduction

## 2 State of the art

### 2.1 Aesthetic measures for evolutive art

**Definition** Two modes of aesthetics measures can be defined [3]:

1. *Aesthetics evaluations are expected to imulate, predict or cater to humans notions of beauty and taste.*
2. *Is an aspect of meta-aesthetic exploration and usually involves aesthetic standards created by software agents in artificial worlds.*

According to Galanter [3], computational aesthetics measures can be classified in the following categories:

- Based on Formulaic and Geometric Theories. The aesthetics of a piece of art are evaluated using a formula or principle (e.g., pythagorean proportions).
- Based in Design Principles. Like the rule of thirds or theory of color (e.g., opposite colors) [1].
- Based in Neural Networks and Connective Models.
- Based in Evolutionary Systems:
  - Interactive Evolutionary Computation. The fitness of the individuals is determined by human agents.
  - Performance based goals. Certain properties of the art piece are evaluated and optimized based in performance measures (e.g., usable surface in furniture design generator).
  - Error relative to Exemplars. The individual fitness is measured using a real-world example (e.g., a photography or painting). [2]
  - Complexity measures. This type of measures is based in the idea the complexity is directly related to aesthetics.
  - Multi-objective. Given the multidimensional nature of aesthetics judgement, multi-objective EAs are a clear option in order to deal with this multidimensionality.
  - Extensions to EA (such as, coevolution, agent swarm behavior, etc.).
- Complexity Based Models

## References

1. E den Heijer and A Eiben. Evolving pop art using scalable vector graphics. *Evolutionary and Biologically Inspired Music, Sound, Art and Design*, pages 48–59, 2012.
2. Steve DiPaola and Liane Gabora. Incorporating characteristics of human creativity into an evolutionary art algorithm. *Genetic Programming and Evolvable Machines*, 10(2):97–110, 2009.
3. Philip Galanter. Computational aesthetic evaluation: past and future. In *Computers and Creativity*, pages 255–293. Springer, 2012.