

Towards the Development of Artificial Art Critics

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Abstract

The artistic process depends highly on the ability to perform aesthetic judgments, to be inspired by the works of other artists, and to act as a critic of one's own work. These, in turn, depend on the ability of seeing/listening. As stated by Boden:

“someone that has a new idea must be able to evaluate it by itself” [Boden, 1990]

We think that modeling this capacity of the artist is an important, if not necessary, step in the creation of a “real” artificial artist. After all, an artist is also, and foremost, a viewer/listener.

This contrasts with the vast majority of the computational systems for artwork generation that have been developed during the past few years. Typically, the role of the viewer/listener is completely neglected; such systems have neither the ability to perceive the artworks produced by them (or by other artists), nor are they able to perform aesthetic judgments. As such, these systems tend to be completely blind/deaf to the outside world.

In this paper we will describe, briefly, a general architecture for the development of Artificial Art Critics (AACs), i.e. systems that are capable to see/listen to an artwork and perform some sort of evaluation of the perceived piece.

This architecture, based on an analysis of existing AACs, encompasses a *feature extractor* and an *evaluator* module. The *feature extractor* is responsible for the perception of the artwork, generating as output a set of measurements that reflect relevant characteristics of the artwork. These measurements serve as input for the *evaluator*, which assesses the artwork according to a specific criterion or aesthetics.

In order to allow an easy adaptation to different domains, the proposed architecture separates generic from domain specific components. Furthermore, it also establishes a boundary between static and adaptive modules.

One of the main difficulties in the development of Computational Artists, and more specifically AACs, is their validation. To address this problem we propose a multi-stage validation methodology that allows a structured testing of artificial art critics, enabling the comparison of different approaches. The validation methodology comprises several stages, ranging from author and style discrimination to the integration of the artificial art critic in a dynamic multi-agent environment, which includes human agents.

Following the proposed architecture we developed AAC in the musical domain, and tested its performance in several Author Identification task. In this type of test the system must be able to recognize the correct author of a given piece. The experimental results collected so far are extremely promising: the system is able to identify correctly all instances of the training sets, and more than 95% of the instances of the test sets.

The research in the area of artificial art critics and artists is still in an embryonic stage. The proposed architecture and validation methodology is intended to provide a common foundation for the development and validation of artificial art critics, and to promote collaboration among researchers in this area.

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