

## **Algorithmic Generation of Temporal Forms**

Dobrian proposes in his paper a method of algorithmic composition in which all aspects of a composition can be derived or modified through the use of generated functions. The paper is organized into three primary sections that I will discuss. The first is an outline describing the basic elemental make up of a piece at different levels. The second introduces the idea of a piece always being in a state of stasis or in transition to becoming in a state of stasis, and how this can be modeled as a function over time. The final section discusses how generated functions can be used in real composition projects.

The first section discusses a common technique in music called ornamentation, in which the piece departs from its current structure and returns at a later time in the piece. This can happen at the note level all the way up to high level syntactic structures. This idea can not only be applied to notes and pitches, but all other aspects of music such as harmony, tempo, volume and key.

The second section looks at the notion of representing these departures and returns as functions of the attributes over time. He illustrates this point by plotting a curve above a section of some piece fragments. He notes that even if a function has been derived from one aspect, the curve itself is completely general and can be applied to any property of the music to create a variety of different results. A simple analysis of the curves shows that there are three main elements to the ornamentation. The ornament and transitioning to and from this state. The method given for generating a new curve algorithmically is to take a line segment and recursively add new points such that regions of stasis and transition are created of arbitrary intricacy.

The use of these curves can be applied at any level of the music. At the note level, a few seconds, these curves can be used to create unique gestures in the sounds. At higher levels they can be used to direct the form and movement of the piece. Although these curves can be used as is he suggests modifying the algorithm so that each point on the line doesn't represent an absolute value for directing the piece but rather only a likelihood that it does so. In this way he hopes that the overall shape of the curve will still lead the listener in the right direction but will not be so predictable that the piece is boring.

It is a little unclear exactly how the shape of each new curve is generated and how this can be controlled. This seems critical to the outcome and success of the resulting piece. This seems much to the point of the other paper for this week where the whole point about using tonal music as a basis for automatic composition was because of the breadth of resources describing the successful structures in a particular style. Here these curves seem to be ignoring these aspects by generating seemingly random or semi-random curves. This criticism is slightly assuaged in towards the end of the paper when talking about the idea of combining these ideas with fitness functions but in a way this just pushes the burden onto finding a good fitness function which does not seem trivial.