

COMPUTATIONAL EXPRESSIONISM: a study of drawing with computation

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DESCRIPTION

Computational Expressionism is an exploration of drawing using a computer that redefines the concepts of line and composition for the digital medium. The concept of drawing with computation essentially means that the artist must program the shapes that the linear motion of the hand will produce. The artist defines the patterns and colors, the behavior of the brush, provides its computational attributes, using algorithms and design principles.

The computational line augments the traditional concept of line making as a direct deposit or a scratching on a surface. The computational line embodies not only an algorithmic representation, but also dynamic and interactive behavior. A computer allows us to construct drawing instruments that take advantage of the dynamism, interactivity, behavioral elements and other features of a programming environment.

Drawing becomes a two-fold process, at two distinct levels of interaction with the computer. The artist has to program the appearance and behavior of lines and subsequently draw with these lines by dragging a mouse or gesturing with some other input device. The compositions incorporate the beauty of computation with the creative impetus of the hand, whose apparent mistakes, hesitations and inspirations form a complex and critical component of visual expression.

<http://www.media.mit.edu/~joey/x/>

ADDITIONAL DESCRIPTION:

The constrained and stylized character of current two-dimensional digital art is directly related to the fact that most artists work with already existing tools. Programmed drawing tools are much more powerful aesthetically than traditional drawing media. A single algorithm can generate whole images or patterns whereas a piece of chalk, no matter how dark, can only trace very elementary shapes. The stylistic nature of computational tools can influence the visual nature of the art to a greater extent. Algorithms are so controlling that we must carefully choose, as well as author, the tools and the methods with which we decide to create and manipulate digital media.

The concept of drawing with computation essentially means to program what sorts of shapes the linear motion of the hand will produce. For an artist to draw computationally means that the artist defines the patterns and colors that the brush produces, defines the behavior of the brush, provides its computational attributes, using algorithms and design principles.

A computational line (representation of a gesture drawn with computational tools) has three attributes.

- The computational line has physical appearance, which can be a set of points joining two endpoints; it can be a shape, a pattern, a representation of a mathematical algorithm, a color.
- The computational line has individual behavior: dynamic properties such as a change of color over time, or movement across the canvas.
- Finally, the computational line has behavior in its interaction with the other lines on the canvas. It can push them away with pseudo-magnetic forces, change their color, or affect their shape.