

Aesthetic Computing Manifesto

The application of computing to aesthetics, and the formation of art and design, has a long history, which resulted in the emergence of computer art as a new art form in the 1960s, with the integration of hardware, software, and cybernetics. We propose to look at the complementary area of *applying aesthetics to computing*. Computing, and its mathematical foundations, have their own pre-existing aesthetics; however, there is currently a difference between the relative lack of variety of these aesthetics in contrast to art, which has a long history containing of a multitude of historical genres and movements. We wish to strike a balance between cognitive and material aesthetics. Software as written in text or drawn with flow-charting may be considered elegant. But that is not to say that the software could not be rephrased or represented given more advanced media technologies that are available to us today, as compared with when printing was first developed. Such representation need not compromise the goals of abstraction, which is a necessary but not sufficient condition for mathematics and computing, as meaning, comprehension, and motivation may be enhanced if the presentation is guided by a pluralism of aesthetic choices and multiple sensory modalities.

Computer programs and mathematical structures have been traditionally presented in traditional text-based notation even though, recently, substantial progress has been made in areas such as software and information visualization to enable formal structures to be comprehended and experienced by larger and more diverse populations. And yet, even in these visualization approaches, there is a tendency toward the mass-media approach of standardized design, rather than an approach toward a more cultural, personal, and customized set of aesthetics. The benefits of these latter qualities are: 1) an emphasis on creativity and innovative exploration of media for software and mathematical structures, 2) leveraging personalization and customization of computing structures at the group and individual levels, and 3) enlarging the set of people who can use and understand computing. The computing professional gains flexibility in aesthetics, and associated psychological attributes such as improved mnemonics, comprehension, and motivation. The artist gains the benefits associated with thinking of software, and underlying mathematical structures, as *subject material* for making art. With these benefits in mind, we have created a new term *Aesthetic Computing*, which we define as the application of art theory and practice to computing.

Neora Berger Shem-Shaul

Olav W. Bertelsen

Jay Bolter

Willi Bruns

Annick Bureaud

Stephan Diehl

Florian Dombois

Achim Ebert

Ernest Edmonds

Karl Entacher

Paul A. Fishwick

Susanne Grabowski

Hans Hagen

Volker Höhing

Kristiina Karvonen

John Lee

Jonas Löwgren

Roger Malina

Jon McCormack

Richard Merritt

Boris Müller

Jörg Müller

Frieder Nake

Daniela-Alina Plewe

Jane Prophet

Aaron Quigley

Rhonda Roland Shearer

Steven Schkolne

Angelika Schulz

Christa Sommerer

Noam Tractinsky