



APPLICATION

ArtGen - Algorithmic art using Delphi

PROGRAMMER / ARTIST

Volker Diefenbach

GENRE

Computer art

TOOLS USED

Delphi

Applications created with Delphi/Pascal are primarily used in the fields of science and technology as well as in business. The development environment is seldom used to create art. With ArtGen, programmer and artist Volker Diefenbach has managed to create a fantastic combination of two worlds that can be described as “algorithmic art”.

HOW IT CAME ABOUT

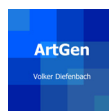
Programmed art has developed immensely since it began in the early 1960s. On the one hand, this is, of course, due to the advancements in hardware and software, on the other to the artist's ability to use them. Another significant feature of this approach however, is that the artist develops his images using programs he has written himself and therefore does not have to rely on ready-made painting and drawing programs.

This ‘algorithmic art’ has a natural affinity to ‘Concrete Art’, which does not depict objects of the material world and avoids all symbolism. Accordingly, Diefenbach describes “the aesthetics of systems and structures” as the subject of his art.

PROGRAMMER AND ARTIST

Volker Diefenbach from Bergisch Gladbach in Germany is such an algorithmic artist. Since 2014, he has been combining his passions for art and programming using Delphi and producing his images exclusively on the computer since then.

“ After many years of producing analog works, the move to programming art opened up a new world of creativity for me. The possibilities to create sequences, to try out color variations, to duplicate, turn, reflect, overlay and distort graphic elements, and to use elements of random order allow the solution space of a conceptual approach to be creatively explored. The fundamentals are of course trigonometry and vector calculus as well as an understanding of how computer graphics work. ”



Volker Diefenbach



THE APPLICATION

Over the years, a comprehensive VCL application called **ArtGen** has been created, which not only includes approximately 1,300 programmed artworks but also more than 130 effects.

From a technical perspective, the application currently includes more than 130,000 lines of code and over 2,000 visual objects.

In accordance with art jargon the artworks are organized into portfolios, (Figure 1):

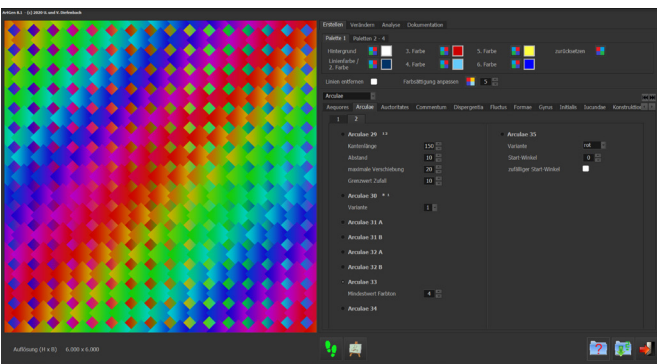


Figure 1: ArtGen - Portfolios

In particular, the effects for changing existing images offer a huge number of options through parameterization. But the artistic idea and the design concept are decisive for every image here as well (Figure 2).

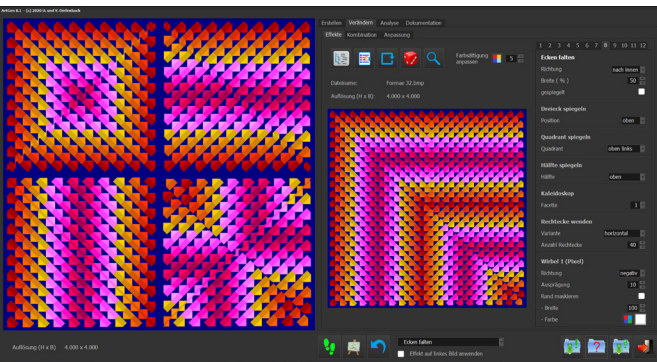


Figure 2: ArtGen - Effects

The integrated documentation function is also important. It records all of the settings selected when creating an image and transfers them to the sister application ArtDB.

ArtDB is used to maintain an overview of the images created and to document which images were shown at which exhibition, who bought them and in what format they were printed.

As images created on a computer can be reproduced at will, it was obvious right from the very beginning that strict limitations on print runs would be necessary. Because in the end, an image created this way is only an original if it is signed and numbered by the artist. This is also documented in ArtDB.

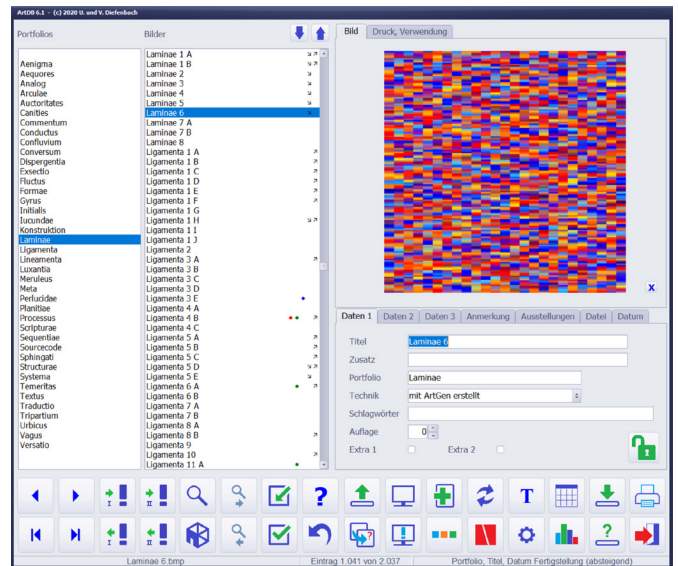


Figure 3: ArtDB

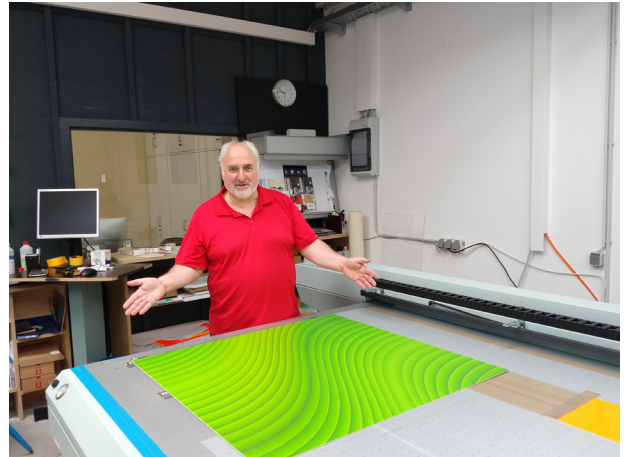
“Delphi provides me with a comprehensive and highly productive tool for realizing my artistic ideas. Moreover, very readable program code can be generated using Object Pascal. On the one hand, this is important because creating an image often requires numerous iterations and, on the other hand, it makes it much easier to rework and further develop an image later on.”

Volker Diefenbach

CHALLENGE

At the beginning the step from creating artwork on the computer to printing it almost became an insoluble problem: Because the conversion from RGB color space used on computers and the CMYK standard used by print shops leads to a partially reduced range of colors, especially for blues and greens.

But thanks to the efforts of local printers “[pb Druck und Werbetechnik Birlenberg](#)” this was resolved with a profile adjustment. Having initially printed on paper, Diefenbach today has his artworks printed using what is known as UV printing on Alu-Dibond sheets (usually with a size of 100 x 100 cm). This means that the images produced are very robust, do not require a frame and can be permanently hung outdoors without any problems.



RESULTS

What do Volker Diefenbach's artworks look like? This small online gallery shows a selection from various portfolios:

<https://www.embarcadero.com/case-study/diefenbach-artgen-case-study/image-gallery>

These pictures are usually acquired at art exhibitions or in direct contact [with the artist](#).

Contacts in the art scene have led to further programs being created by Volker Diefenbach - using Delphi of course: There are programs for art collectors specifically tailored to each user as well as a complete inventory and process administration program for art lending libraries.



ArtGen
Online Gallery



I have used Delphi since the early versions and am fascinated by the extensive range of options Delphi provides me with to work productively. I have, of course, looked beyond this from time to time but have never found anything I can work with better than with Delphi.

Volker Diefenbach

