Ten Years of Mastering the ‘Brush’

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In 1975 David Em first learned that there was a digital process for making art. He had been searching for a medium that would provide more control than the video techniques he was using then.

He was introduced to Alvy Ray Smith, Dick Shoup, and David DiFrancesco at Xerox Palo Alto Research Center in California. They were working on an early frame buffer and paint system, “Superpaint.” Alvy Ray Smith thought artists should be interested in this new form of making pictures, and David Em was. His computergraphic art career started there and then (See Figure 1). It was the first

Figure 2. *Nubes*, 1985. In Em’s earlier computer works, he had available only a restricted color range. He now has a full-color (24-bit) system. His computer language has become an extension of his art language.

Figure 3. *Eduardo 2*, 1985. The first showing of the cloud series was seen in the Frame Buffer of the Art Show at SIGGRAPH 85 in San Francisco last July.

The cover of this issue is a detail from *Chin Li*. David Em’s background as a colorist is evident in his latest series of pictures. A full color palette has inspired the artist to “paint with pixels.”
Beginnings

David Em was born in Los Angeles, brought up in South America, and in 1970 entered America’s oldest art school, the Pennsylvania Academy of Fine Arts, where he studied painting and sculpture (see Figure 5).

In his second year at the Academy David Em became interested in plastics. “I started making my own paints, and without realizing it, all the things that ultimately got me sitting down in front of keyboards in high-tech labs I had somehow instinctively done right there: Go to the source, talk to the people doing it. I found that somebody will ultimately talk to you and turn you on to all these things. I was moving past the technical information available in my surroundings.”

Em left the Academy, moved to the West Coast, and eventually started making videos in the Bay Area. His creative enthusiasm was stimulated by his introduction to computer art at Xerox. The Xerox project ended in 1975, forcing all concerned to find another setting. A continuing problem for all computer artists revolves around getting access to the technology necessary to do their work. David Em is currently Visiting Associate at the California Institute of Technology in Pasadena, California.

Growth

Color and texture were primary concerns in Em’s work, from his early painting made at the Academy to his computer pictures of today. He works with computer programs written for scientific purposes by James F. Blinn. David Em has applied them to his fine art (see Figure 6).

Figure 4. Turner, 1985. The stylistic relationship between Em's painting in oil (see Figure 5) and his painting in light is clearly seen in this recent work.

Figure 5. Dyan, 1971. David Em did this oil painting using an untraditional technique. He employed a 4” housepainters’ sash brush. This was done while he was a student at Pennsylvania Academy of Fine Arts.

Figure 6. Transjovian Pipeline, 1979. Em used a mapping program to create these highly patterned futuristic images. The work also hangs in Infomart.
In 1983 Em became involved again in the metaphor and effects of paint and line, not only with brushes but in his computer-aided works (see Figures 7 and 8). "I really believe it’s important to know how to draw," he says. Before he made his latest series of computer paintings, Em first made a stack of drawings. It is his background in art and his ability to visualize that distinguish his works from those of others using the same tools.

**Computer art comes to Dallas**

"The production of environmental art is exciting and a challenge," says David Em. His *Escher*, a multiphotomural, is poised atop the seven-storied lobby of Infomart in Dallas, Texas. This work (see Figures 9 and 10) is one of six large computer-aided artworks commissioned for Infomart from David Em. The technology center, which opened in Dallas early this year, has computer-aided artworks in its public rooms by three artists, David Em, Doug Nelson, and Richard Horner.

Artists who create large-scale works for public buildings have a site-related set of concerns about their work. Not only are there challenges related to the production of photographic prints on such a large scale, but there are serious concerns relating to the protection of the works after they are hung.

**Making large prints**

The process of making such prints is complicated and highly specialized. One of the primary problems facing computer artists is how best to show their works. David Em has decided that Cibaprints are the photographic form truest to the images as created on the monitor.
Figure 10. In these photographs you can see Escher as it appears in the environment for which it was created at Infomart.

The first step in the print process is to make a photograph of the image from the monitor. Em uses 35mm Kodachrome 64 film. The images are transferred to an 8" × 10" Ektachrome film format for test prints. Then large test strips are printed to scale and tested across the greatest range of observed values to find out if the process would succeed for this size print. Em could only speculate about the “dot matrix,” that is, the individual phosphor triads depicted at that size. The actual prints were then made.

The other five of Em’s commissioned works are six feet high by eight feet wide. Moving prints about during the production process was a new experience for everyone concerned. No one had made computer-generated Cibaprints that size before.

The post-production process included retouching by David Em and photographer Michael Wilder (see Figure 11), laminating prints with a clear plastic film, and framing, crating, and shipping them to Dallas. The entire printing process was put into the hands of Chuck Rice of ColorHouse, Burbank, California. David Em has a real appreciation for this shop: “Chuck Rice worked on his own time for innovative solutions to some of our problems,” which included experimenting with film and paper processes to achieve maximum “punch” and luminosity.

David Em has long been interested in environmental art, “even before I got into computers. I have always been fascinated by space, mood, and lighting.” He would like to do more environmental pieces in the future. “I want to work intimately with the designer to create something for a given space, where art and design are perfectly matched in one integral process.”

Figure 11. Michael Wilder is seen here retouching Persepol, a 1980 Em that hangs at Infomart.