

Dynamic Painting

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The Dynamic Paintings I'm designing are examples of generative art - an art that has been generated algorithmically by a computer system. There have been many attempts at producing generative art; the history of it goes back to the early days of computer development. Many of these works have used fractals and pretty much none of them accounted for more than just basic artistic principles. This is not the case for my Dynamic Paintings. I'm a strong believer that innovation is often born when several drastically different disciplines come together, and I think that being an experienced programmer and an artist gives me an edge.

Another big challenge with dynamic pictures has been the inadequate computing power of personal computers to handle advanced algorithms that describe artistic principles of a computer generated painting. My technology uses powerful video cards to generate real-time images that rival most of the conventional contemporary paintings that cost thousands of dollars. This is not something that has been attempted before. Also, being able to generate images in real time enables me to set paintings in motion and create a new experience never seen before. The painting is always in the state of a perpetual transformation. It never repeats itself. Every time a new image is created, there is an opportunity for a peaceful receptivity and then the work disappears forever.

Many of the modern CPUs are still not powerful enough to generate these images in real time; only the latest developments in programmable video cards (GPUs) have made this technology possible. Instead of using video cards for rendering 3D images like video games do, my technology taps into the video card's raw computing power. Painting algorithms, translated into pixel shaders - programs used by GPUs - painstakingly construct paintings pixel by pixel at any desired resolution with an unprecedented level of detail. This is an example of using video cards for what is called general purpose computing on GPU (GPGPU). The rendering engine is constructed in such a way that we are not limited by the video card's native resolution, so I am able to produce images as big as 80 to 100 Mpixels for printing on a real canvas.

I'm confident that dynamic paintings will be widespread in the near future. The falling costs of powerful computers and high-quality LCD or plasma TV panels will make it affordable and widespread. The benefits of this genre are obvious: an endless supply of unprecedented and unpredictable paintings in place of one static image.