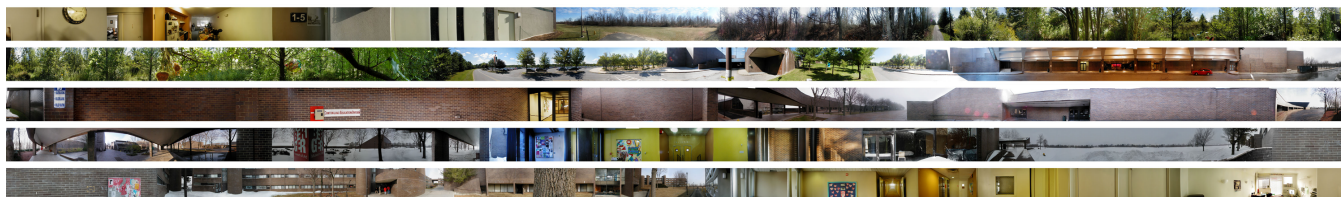


All This Useless Beauty - A 200 Megapixel Panorama

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Abstract

All This Useless Beauty was created as a frame to capture everyday objects, places, physical acts, and present them as art. The final dimensions of the stitched panoramic photograph presented at the SIGGRAPH 2004 Art Gallery were 3 inches high, by 50 feet long.

1 Introduction

The work began to take form while finishing my undergrad degree in music composition. The piece is an artistic study of a musical concept presented by John Cage [1964; 1997], and his idea that, anything, if labeled, is art. The plain beauty I aimed to present as art, proved difficult to find. So the mile long journey I made everyday, for four years to the Music Conservatory became the subject. Digital Photography and the visual image were the medium. I wanted to capture the walk itself, and how it was to experience the growth of nature, and the passing of seasons (see Figure 1). Though the trip itself rarely deviated, countless changes occurred in the landscape every day.



Figure 1: Empty field. Geese flocks gone south for winter.



Figure 2: Uncropped segment of final photograph.

There are several processes for creating panoramic photographs. The first, oldest, and least flexible of the techniques uses special panoramic cameras. Joseph Puchberger in Retz, Austria is credited as having built the first such camera as early as 1843 [McBride 1994]. Gene Miller [1984] presented a reliable way to acquire entire 360 photograph spheres by compositing images taken from mirror balls. This is the most commonly used process for creating the high dynamic range environment maps that are sweeping the CG industry. The technique which I used, requires no more than a digital camera, and a photo editing program to stitch the images together [Rigg 2000]. I wanted to create something on a grand scale. Contrary to traditional stitched panorama photography, in which the camera is rotated on a tripod, the images were taken while moving horizontally (Figure 2). I believe it was this side stepping technique that helped capture some sense of motion so integral to the piece.

As an amusing note, most people either did not want their picture taken, or took great pains to avoid my slow progress. But in truth,

very often, at 6 am, when this daily trip to the Music Building was made, I was in solitude. So, while I never intended to show this solo aspect of the journey, it was accurately captured.

2 Implementation Details

Densities and color fluctuations of traditional film, first attempted, showed digital photography as essential in the fabrication of this image. The digital photographs were taken with an Olympus D-460 ZOOM 1.3 Mega Pixel camera. Adobe Photoshop 7.0 was used to sew the images together. The process involved taking a picture, and moving one or several paces to the left for the next shot depending how close the camera was to the target (e.g., a field or a brick wall). Auto focus was used, but manual settings for white balance and exposure changed for every sequence. Weather conditions affected these settings the most. In total, 1500 photographs from 9 different photo-shoots were used. It took a little over one year to complete the project. If lined up, the farthest right and left ends join seamlessly.

3 Technical Difficulties

The image was originally designed to be viewed as a movie projection along with a composed “found sounds” audio track. This failed right from the beginning. The small viewing angle and low resolution of projection gave the impression of a long uneventful camera dolly. The photograph’s grandeur was conceptually lost. Rules of perspective had to be bent to enhance perceptibility. If the image went through a building, each side of the building had to be visible, otherwise the picture seemed fake and discontinuous. The greater amount of information nearer the camera had to be compensated to match the slower addition of far objects. Much of the foreground was removed in the process. Unlike [Lyons 2003], foreground removal and image overlap reduced the available 2 gigapixels to only 200 megapixels in the final image. The volume of data was the largest obstacle. The complete image was sliced into 40 segments of varying and manageable sizes. The smallest file containing only 4 images, and the largest having a composite of nearly 200.

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