Reading Critiques

Artifacts of the Presence Era - Using Information Visualization to Create an Evocative Souvenir

Visualizations of this category are now getting data from two mediums: video and audio. Particularly, Artifacts of the Presence Era captures video and audio from a museum and shows evolving history in space. Originally, the researchers were asked to essentially create a time capsule forICA Boston's current building before a new building would replace it. They focused on conveying the historical essence of the piece in aesthetically compelling manner, not necessarily showing trends or summarizing data like many other visualizations.

The metaphor used for the visualization was of geological layers in sedimentary rock. As time passes, there is a buildup, an accumulation of layers over time as well. The temporal changes lead to a visual pattern. A layer of rock is visualized using a web camera capturing the entrance of the museum every 5 minutes. A horizontal strip is taken from the picture. The shape of the strip/layer depends on the shape of the audio wave at that time. There is a 6-step process in how that shape is created. Over time, the images are compressed further and further into thinner layers.

An interesting aspect of this project is that there were two projections shown to the audience during the capture of the data. The “Present Display” ran the real-time footage from the camera while the “History Display” showed the sedimentary build-up over time. This directly allows people to make the connection between the present capture and how the image feeds into the historical display. Also, the real-time footage attracts people closer to the visualization when they see themselves on the Present Display. I was wondering, though, whether this disrupts from the normal activity of the museum that the visualization was intending to capture. It seems that many of the captured images were close-ups of people, not necessarily what was going on in the museum. It may have also been interesting to do an aerial shot of the museum rather than just the front.

Other reactions to the visualization were amusing. When learning that only one image will be saved every 5 minutes, people would stand there until the picture is taken. It just speaks volumes about what people like in visualizations. They like to see themselves – like a mirror. People also enjoyed the changing, fluidity of the visualization. The History Display was constantly changing and people could interact with it. They peeked back at past moments and see other people at the same spot but different time. I feel like it’s almost as if they’re relating with others over the commonality of being at the same place.
Painterly Rendering in Curved Brush Strokes of Multiple Sizes

The purpose of this research was to create the effects of a hand painted image from a photograph. This area is called non-photorealistic rendering of images. One application of this would be to animating an feature-length movie in a watercolor or oil painting style with ease. Current technology do not do this very well and methods of creating the traditional drawings take a long time. Wet media like watercolor and oil paint are the most challenging to simulate because of the rich set of effects produced by fluid flow and transparency. Therefore, the researchers try to dissect the painting styles in order to create automatic painting and drawing without human intervention.

First, a study in the techniques in painting took place in order to understand the different aspects algorithms must be able to mimic. These techniques included varying brush size, different stroke types, as well as styles. In the algorithm format, the program essentially created multiple reference images using the different brush sizes and stroke types. Larger brushes and bigger strokes were used first and then smaller ones would layer on top. Then the image was combined together, the earlier layers would be still seen and smoothed. The variation helps draw attention to the lines of smaller brush size and ignores the larger ones. Finer strokes and finer brushes are emphasized for the fine detail.

The technique that was most difficult to model is style. They experimented with four painting styles including Impressionist, Expressionist, Colorist Wash, and Pointillist. Depending on the type, different parameters for the style, curvature filter, random color, and brush strokes were given. Also, hue and saturation were also adjusted. Results are shown in Figure 5 in two images. Although I’m not a painter myself, I can tell the differences between the “style” and parameters used. The image of the building definitely has more random color and jagged edges while the picture of the woman is more smooth and blurred.

Personally, though, I’m very skeptical of how accurately algorithms can portray human design. I draw as a hobby and sometime the expression and stroke is an in-the-moment decision or portrayal of feelings. Also, the fluidity of watercolor is so difficult to portray. It seems like the edges that need to be emphasized such as the eyes, face shape, mouth, etc of a person aren’t emphasized and edges that are emphasized shouldn’t be. The algorithm needs to be smarter in determining what exactly it’s drawing and adjust accordingly. The 3D aspect of oil paintings is something that will also difficult to capture readily on a flat, 2D screen. There is definite texture that needs to be included in the image as well. The research attempts are interesting, but all of the aspects must be included not just some. And prioritizing which techniques should be emphasized in certain areas over others will be the enduring challenge.