Review of “Artifacts of the Presence Era: Using Information Visualization to Create an Evocative Souvenir” by Viegas, Perry, Howe, and Donath

The paper describes an innovative method for capturing video and audio from the environment and creating a souvenir of a particular time and space. It tried to address the challenge of representing hundreds of hours of video in a highly compact manner. The effort is to highlight the long-term temporal patterns in the photos and the authors innovatively decided to use the geological layers in sedimentary rocks for record keeping. This enables the viewers to act as archaeologists and be able to go back into the past to learn more about what has happened. I like the fact that images showing people and ambient sound were favored since the goal of the system was to summarize the presence of the people and not the museum itself.

The other interesting point about the idea is the use of sound wave to create the layers. I believe this is an excellent way of combining sound and pictures while the goal of focusing on the people is satisfied. Based on the used method, more people would lead to higher ambient sound and thus the layer would be thickened.

One other important aspect of the designed system is the fact that since the viewers are going to be museum visitors, they should be expected to spend only limited time on the visualization and thus the system must be updated fast enough to give them the idea that layers are being created in real time. I believe this is an excellent implementation of a system since the main focus is on the users and the whole system is customized to match their characteristics.

The presented method interestingly followed the real natural sedimentation process and older layers become pressurized because of the weight of the top layers. Also similar to nature, layers merge into each other at extreme points. This has been implemented in the system by combining the representative photos of those two layers into one photo by giving each of them 50% transparency.

The other interesting factor in the system is the simplicity implemented in the system. Since users are not expected to spend much time learning the interface, the simplest possible browsing interface has been used.

The paper concluded that visitors were amused by the camera and a lot of time would pose in front of it in order to get their picture taken by the system. However, I think this does not solve the problem with the privacy and surveillance. The fact that many people like the system does not solve the issue of privacy and there exist some people that don’t like to be recorded on any kind of camera. In this case, adding abstraction to the output such as what has been used in Temurals could be a good way of solving the issue. This might prevent the system from attracting people from a group based on the fact that one of them sees a familiar face on the screen but at the same time would lead to more privacy and thus more applicability of the system.
Review of “Telemurals: Linking Remote Spaces with Social Catalysts” by Karahalios and Donath

The paper presented innovative method for changing a photo image into a hand painted drawing. It enables users to use curved stroking with customized specification to reach different styles of paintings. The strength of the paper lies in the fact that most of the current computer paintings just use straight strokes which resulted in mechanical and artificial paintings. The paper used multiple brush sizes with curved brush strokes and thus the result is much more realistic. However, adding features such as mood, emphasis and emotion to the brush strokes to convey important features of an image could be one step further than current situation. It was interesting to see that due to complexity of fluid flow and transparency, wet media such as watercolor and oil paint are among the most challenging simulations.

What I liked most about the paper, is the fact that it tried to follow the painters method of painting. Most of the painters usually start by painting rough strokes and then go back over the paintings with a smaller brush to add detail. The author used fine brush strokes in places that it is necessary to refine the painting and left the other parts alone. The presented procedure locates areas of the image that differ from the reference and covers them with new finer brush strokes. In other words, areas with little detail are painted only with very large brush strokes and the strokes are appropriate to the level of detail in the source image.

It was also interesting to me to learn that long, curved strokes express a gesture, the curve of an object or the play of light on a surface. However, the paper limited the brush strokes to constant color and used image gradient to guide stroke placement. The method used is simple but effective. It placed control points for the curve by following the normal of the gradient. When the color of the stroke deviates from the color under a control point of the curve by more than a specified threshold, the stoke ends at that control point. This means that very large brushes create broad sketches of the image, to be later refined with smaller brushes. Each stoke is terminated either when its maximum length is reached or when the difference between colors exceeds the threshold. In addition a minimum stroke length is added to the algorithm to prevent the speckled appearance of very short strokes. Other features such as texture and richer strokes could be added where the stroke is capable of handling pressure, bristles, wetness and tapering.

The paper mentioned in the rest that there is no correct algorithm for rendering photos into painting. This is consistent with the fact that even for painting there exist no right approach and each designer prefers to use one. To address this issue, the authors presented the use of stylized parameters to control the rendering and added that these parameters should be consistent for different photos. In other words, these parameters should result in same rendering for different photos and thus could be used to render a video sequence consistently. One other factor which should be considered when introducing parameters is that each parameter should be independence of others so that when changing one of them no other feature of the strokes changed. One interesting idea is to have defined different strokes based on the style of different famous painters. Then the user can upload his photo and render it by using the stoke method of his favorite painter.