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CS 498  
Critiques

Painterly

Naturally, the evolution of visual communication is from static to the dynamic; from cave painting to daguerreotype to Edison's Kinetoscope. Only naturally would this extend to the Painterly algorithm. Extending the criticism I pointed in that direction requires only having to turn that sabre a slight degree to jab into its brother, the video rendering. Except it doesn't bleed nearly as hard for reasons ahead:

It's a novel application of something existing rather than reinventing the wheel. Paintings don't move. Computers are a terrible facsimile of putting brush to paper. What is great is that computing power can bring to life what you read about in *Harry Potter* and would want in your castle / humble abode / etc. I think having a video screen with painterly video would look cool. I think putting painterly renderings of photographs in a digital photo frame would look tacky.

The authors approach the subject with the obvious extension of their still image sibling - taking each frame or key frames, turning it into painterly rendering, and then putting it all in sequence. What they recognize is that this adds an unreal 'flickering' element to the scene. To address this they introduce the methods of painting over, difference masking, and optical flow. This in itself is a novel solution to a novel problem that is only explored in this medium. And it seems to work well. What would work better for an update to the paper, especially in our YouTube world, are video examples of this at work (there are no examples of this at work in a dynamic fashion, but plenty of examples of "painterly" at work and in an instructional manner. None suggest methods that are as robust as the authors', further suggesting this had not taken as much shape after its authorship).

As with any of the technologies studied, the reader has to ask if it is worth pondering: what can be accomplished today given the loosened constraints on computational complexity? The clear result of that roadblock in times of old was the slow frame rate and the inability to do optical flow but only in real-time applications. I would posit that it would be possible to do a cinema-worthy 24 frames, but as the authors suggest, the 'realism' achieved at that frequency detracts from the notion of painterly and appearing to look less like a living painting but 'video with bad artifacts.'

The interactive application of this technology definitely shows promise but is not explored in as much depth as this reader desires. Still, the technology holds its weight and makes a useful extension of its ancestral shortcomings.

Telemurals

Ah, the social catalysts of yore. Except now, we study it from the perspective of video and how it might affect that experience. We begin by looking at the historical precedents for such a work and the key differences and experience gained. The authors introduce Whyte's study of public spaces and urban design and offer the key finding of ample places to sit in determining the usage of such space. The takeaway here is the human element in socially catalytic design - will the user literally and moreover figuratively 'sit' in proximity to the design and utilize its function? Will the designer provide such affordances or take advantage of existing usage patterns?

To answer that question with respect to video - one looks to the video itself. It appears that
Telemurals provided an engaging experience to the user despite the level of abstraction it provided. It seems that the learning curve for figuring out that it is not merely an 'abstracted mirror' would need to be designed away more compactly than a picture-in-picture window of the wall itself. (I assume the MIT students using it were quick on the uptake, but wonder though about us state school folks and need for Pavlovian conditioning.) The simplest solution is the same prescribed in the text - a sign explaining the work and removing all doubt of its purpose. Still, the non-English speaker or the unobservant alike deserve better. Still, a minor detail.

I appreciate the blending of video to provide a common image, providing the user with the sense that they are looking at a split video screen of themselves and the other conversant (my no-duh sentence of the week) and giving users something nearly analogous to real life. I also like the detail intelligence - that users come into better focus as they continue to interact would seem to incent users to stay or at least give them a measure for how long they have been interacting.

Moreover, an exploration of Whyte provides the concept of 'triangulation' - the idea that a non-ordinary event in public spaces focuses that attention. The authors mentioned people coming over to the visualization because others were looking at it - an instance of viral patterns of attention in public space that had possibly been experienced with the seminal Hole-in-Space. I feel that the most successful pieces of public curiosity perforce do this and unlike the obligatory Cloud Gate photoshoot, should provide a distinct experience each time. The design of Telemurals works because it provides the same kind of reflection as well as originality over repeated viewings.

I leave the critique by returning to a point raised in connection to Hole-in-Space. The authors suggest that doing something similar to it after a 24-year absence would not arouse the same kind of public interest, extensibly even with some modicum of technological surgery. The question then remains is: why should Telemurals also be engaging? Is it appreciated for being more than an aesthetic exercise? Does it actually "initiate and sustain interaction" after repeated use and exposure? Is it appropriate that the audience is transient within multiple time frames (as a passerby in point-to-point transit and as a temporary resident?) Is there something in the water in Cambridge? Whatever the answer, the reality is that creates a usable social space.

Interactive Artistic Rendering

Again, I take issue with the notion that "any type of mark on paper or canvas can be imitated." Is the suggestion here that blood or cigarette stains or whatever avant-garde techniques can be rendered in a stunning, realistic fashion or that 'imitation' should be taken with the same grain of salt as margarine being compared to butter (in that both achieve much the same effect, but one horribly lacking any realism)? As previous readings have suggested, we can model anything with cellular automata or other methods. The consideration then becomes "why?"

The admission here is that methods for abstraction attempt to recreate what is real and the same can be said for abstraction that computer algorithms provide. The authors condense a few lessons' worth of theory into a few sentences, the gist of which is that ultimately the medium and the message encoded thereupon take a backseat to the user's imagination in proportion to the artists' expression. Thereafter the authors briefly describe their particle system.

The concept of graftals needs to be understood first. The reader is given an idea of how it is used, but the learning curve for understanding simply what it is further above the cellular
automata threshold. The important point is that it is 'implicit' and more or less an object without analogous physical substantiation (like a painterly brush stroke) and provides an interface for complete control. Apparently you can use them to draw Truffula trees using linear algebra.

From this the authors build upon this simple concept to describe how to show position, perspective, and other useful, global features for artistic depiction like shading and line drawing. The best way I could possibly describe this is like xml for graphics, but that's also known as svg. More definitively, it's like xml for 'artistic rendering' as the title would suggest, the interactive portion being much like xml encapsulates data and says nothing about what to do with it.