Sonny Chea

Shaquill_Chea@student.uml.edu

Professor Haim L.

COMP 4270 Computer Graphics

04-18-18

Literature Review #3

For the third and final literature review the two articles I was able to select that had a similar topic to discuss dealt with the concept of the evolution of *Expressive Expression*. These two articles were research papers that went over how far we've progressed in the art of computer generated emulators that allow anyone to wield tools so that they manipulate pictures and drawings. The first article titled "*Expressive Expression Mapping with Ratio Images"* focuses on the concept of being able to make subtle changes to any kind of image, this is known as expression mapping. While the second article titled *"Computer Graphics advances the art of anime"* talked about describing how animators from the past decade (or specifically in the early 2000's) were integrating the use of computer graphics to assist with producing better quality animation or commonly known as anime.

The first article talked about how researchers were able to use of a technique known as Expression ratio image (ERI) that captures an illumination change of one person's expression. They use this and other visual cues and traditional expression mapping techniques for facial expression mapping. Together with the geometric warping, they could use a map of an ERI to any individuals face image to generate a more expressive facial expression. Basically, it helps them morph images into any shape they desire. What was interesting for the article though was that they were able to morph various images with one another, so it reminded me of a precursor to photoshop. Also, it had some linear algebra in it as some of the programs denoted using equations to alter the pixels of the image. However, they did acknowledge the limitations of this method because of lighting conditions, which affect the image marks.

The second article dealt with using 3D objects to help with 2D animation. They talked about how companies in the west used three-dimensional computer animation to produce films that are well known such as *Finding Nemo, Shrek* and *Toy Story*. While Japanese animators

continue to produce thousands of hours of 2D anime every year, and at the same time move from traditional cell shaded drawings to computerized digital animation. But it doesn't stop there, several Japanese animation studios are integrating both 2D and 3D styles of animation. Such as using graphics software to assist with replicating previous drawings (like filling in the blank) and using the graphics software to draw backgrounds and mechanical objects like robot, cars, and spaceships. Artist can use animation software to combine the hand-drawn characters with digitally drawn objects and backgrounds. Computers can not only speed up production, but also offer greater control and versatility. With this, animators can rapidly adjust color schemes, change backgrounds, and add a greater variety of special effects like whirling dust, explosions, and vibrations. This was interesting because as a fan of anime myself I had no idea that they had so much depth into the production of making these quality products. Not only do I take the anime I watch for granted but I should do my best to support these companies that produce them.

Both articles were great resources for individuals looking to learn more about the development and manipulation of images we see every day.

Citation

Expressive expression mapping with ratio images

Bibtex

@inproceedings{Liu:2001:EEM:383259.383289,
 author = {Liu, Zicheng and Shan, Ying and Zhang, Zhengyou},
 title = {Expressive Expression Mapping with Ratio Images},
 booktitle = {Proceedings of the 28th Annual Conference on Computer Graphics and Interactive Techniques},
 series = {SIGGRAPH '01},
 year = {2001},
 isbn = {1-58113-374-X},
 pages = {271--276},
 numpages = {6},
 url = {http://doi.acm.org/10.1145/383259.383289},
 doi = {10.1145/383259.383289},
 acmid = {383289},
 publisher = {ACM},
 address = {New York, NY, USA},
 keywords = {animation, facial animation, morphing},
}

ACM Ref:

Zicheng Liu, Ying Shan, and Zhengyou Zhang. 2001. Expressive expression mapping with ratio images. In Proceedings of the 28th annual conference on Computer graphics and interactive techniques (SIGGRAPH '01). ACM, New York, NY, USA, 271-276. DOI: https://doi.org/10.1145/383259.383289

Computer graphics advances the art of anime

Bibtex:

@ARTICLE{1626180,
author={J. Krikke},
journal={IEEE Computer Graphics and Applications},
title={Computer graphics advances the art of anime},

year={2006},
volume={26},
number={3},
pages={14-19},
keywords={art;computer animation;Japanese animation;anime;calligraphic style;computer graphics;scroll painting;Animation;Art;Character recognition;Computer graphics;Cultural differences;Fans;Motion pictures;Production;Subspace constraints;TV;Japan;animation;anime},
doi={10.1109/MCG.2006.53},
ISSN={0272-1716},
month={May},}

ACM Ref:
J. Krikke, "Computer graphics advances the art of anime," in IEEE Computer Graphics and Applications, vol. 26, no. 3, pp. 14-19, May-June 2006.
doi: 10.1109/MCG.2006.53
keywords: {art;computer animation;Japanese animation;anime;calligraphic style;computer graphics;scroll painting;Animation;Art;Character recognition;Computer graphics;Cultural differences;Fans;Motion pictures;Production;Subspace constraints;TV;Japan;animation;anime},
URL: http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=1626180&isnumber=34132