The Uses of Digital Technology within Traditional Paint on Glass Animation

Technology and Paint on Glass Animation

Applying effects to background and foreground elements in paint on glass animation with a luma matte

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Through digital methods, traditionally created paint on glass animation can be enhanced. In this paper, I explore the use of an animated luma matte to digitally apply effects separately to foreground and background elements in a paint on glass animation. The luma matte was created by exporting a black and white version of the digital rough animation from Toon Boom. The motivation for this technique is to create digital effects for a traditionally animated shot without losing depth.

CCS CONCEPTS • Applied Computing • Arts and humanities • Media Arts

Additional Keywords and Phrases: paint on glass animation, luma matte, traditional animation, animated matte

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1 INTRODUCTION

My thesis film entitled *Storm* features both digitally created 2D animation and traditional paint on glass animation. With the paint on glass portion of the film, I created the rough animation using the program TV Paint. For Shot 012, which is used as the example in this paper, Toon Boom was utilized instead of TV Paint. Next, I imported a render of the rough animation into the stop motion capturing program Dragonframe as a guide layer. I used the guide layer to aid in the painting of each frame in order for the final animation to match my rough animation.

The paint on glass animation is created using two layers of glass for foreground and background elements. The technical issue that I came during the process involved finding a way to add effects in an efficient way digitally without losing the depth of the animation. For this specific shot in my film, it required adding rain digitally behind and in front of a foreground tree as it falls.

Brazilian animated film entitled *Tito and the Birds* is example of using digital compositing techniques with traditional paint on glass animation [Hogg 2020]. The paint on glass animation in *Tito and the Birds* is an animated smoke effect, which is painted on a glass layer over top of a greenscreen [Hogg 2020]. For the film,

an animated digital effect layer of the smoke was created in Toon Boom to be used in Dragonframe as reference, similar to my method of completing rough animation digitally for my paint on glass animation, [Hogg 2020].

2 EXPOSITION

Shot 012 of my film *Storm* shows a tree against a stormy sky. After being struck by lightning, the tree falls toward the camera. The roughs for this particular shot were completed in Toon Boom to be used as a guide for the paint on glass animation.

Figure 1: Still image from the rough animation of Shot 012 from my thesis film *Storm*. Rough animation completed by Danny McCabe. Source: Kirstin Hardin

The paint on glass animation was captured using stop motion capturing program Dragonframe. Within Dragonframe, I brought the rough animation in as a guide layer with lowered opacity. The lowered opacity of the guide layer made it possible to view the live feed from the camera of my paintings underneath the rough animation, ensuring that the two matched. The animated background of the storm clouds moving is painted on layer of glass below the layer with the tree. I chose not to add rain in the paint on glass animation for workflow and efficiency purposes.

Figure 2: Still image of the paint on glass animation for Shot 012 from my thesis film *Storm*. Source: Kirstin Hardin

In order to maintain the depth of the paint on glass animation for Shot 012 while adding digitally created effects, a matte needed to be incorporated to separate the foreground element of the tree from the background. By having followed the rough animation as I painted, it additionally made it possible to use the rough animation as a matte for the paint on glass animation. This was accomplished by rendering the rough animation in solid black and white from Toon Boom.

Figure 3: Still image showing the solid black and white render of the rough animation for Shot 012 of my thesis film *Storm*. Rough animation by Danny McCabe. Source: Kirstin Hardin

The background of the rough animation is rendered as solid black, while the foreground tree is solid white. The solid black and white version of the shot is layered above a duplicate copy of the paint on glass animation in Adobe After Effects. The matte layer is linked to the duplicate copy as a luma matte through the TrkMat dropdown menu. This makes only the tree portion of the paint on glass animation visible for the duplicate copy.

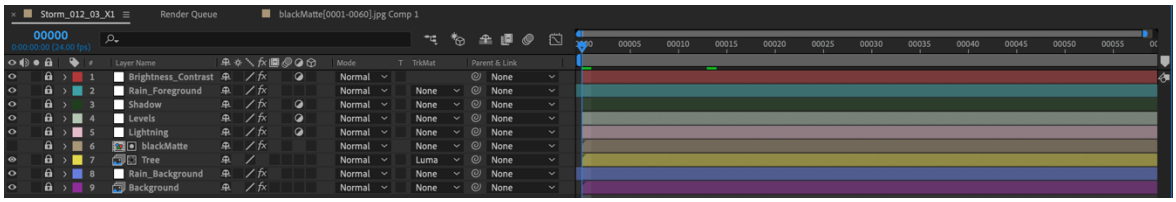

Figure 4: Layers in Adobe After Effects depicting the luma matte layer above the linked Tree layer. Source: Kirstin Hardin

The first copy of the paint on glass animation is layered below both of these layers. This is done in order for effects to be applied to the background separately from the tree. To create more depth between the sky and the tree, the background is darkened and blurred. In between the background layer and the tree layer, is an adjustment layer with a particle emitter to create a rain effect behind the tree.

Figure 5: Still Image of the background effects applied to Shot 012 from my thesis film *Storm*. Source: Kirstin Hardin

Using the luma matte on the duplicated paint on glass animation, the tree is layered on top of the background painting and effects without being blurred and darkened. An adjustment layer with a particle emitter is placed above the tree and the matte layers to simulate rain in the foreground. The particles are blurrier and larger than the ones in the particle emitter behind the tree layer to create depth.

Figure 6: Still Image of the final look for Shot 012 from my thesis film *Storm*. Source: Kirstin Hardin

3 CONCLUSIONS AND FUTURE WORK

The luma matte worked effectively in achieving a layered environment for Shot 012 from my thesis film *Storm*. As the rough animation was followed closely during the paint on glass animation process, the matte created from the roughs lined up well with the final animation. The close alignment between the two, allowed for the luma matte to separate the background from the foreground in Adobe After Effects. Without the matte, all of the effects would have been applied on top of the entire shot, flattening the imagery.

My thesis work has explored the use of combining digital animation with traditional paint on glass animation as a way to emphasize specific story elements. By completing the rough animation digitally for the paint on glass portion of my film, it opened up the possibility of using roughs as mattes. This technique helps increase the efficiency of the traditional animation as it allows for laborious effects, such as rain, to be added digitally as opposed to hand painted on multiple layers of glass. For future projects that involve traditional and digital animation processes, I will incorporate a similar technique of using digital roughs to produce mattes.

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