

# Animation Collaboration with Depth Compositing

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Figure 1: A Production Shot from *Storks* Using Depth Compositing. Image Courtesy Warner Animation Group ©2016

## ABSTRACT

In this talk, we describe the use of depth based compositing to accelerate collaboration between multiple artists on single shots. This workflow allows for increasingly complex shots to be finished in shorter timelines, even when dealing with large numbers of hero characters.

SplitComp is a workflow for artists using depth compositing. It was originally developed for *Cloudy With a Chance of Meatballs 2*, but has since been used on every Sony Pictures Imageworks animated feature by animators and the cloth simulation team. It saves several hours of production time per artist every day of production. Over the course of a single feature film, it saves teams entire weeks worth of time.

Older collaboration systems required artists to export their geometry so that it may be imported into other scene files, which is both time consuming and required artists to make a conscious effort. SplitComp, however, only requires playblasts which are a

natural product of the artists workflow. This allows for significantly less effort from the artists and more frequent updates.

## CCS CONCEPTS

•Computing methodologies →Image processing;

## KEYWORDS

ACM proceedings, L<sup>A</sup>T<sub>E</sub>X, text tagging

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## 1 GENERAL WORKFLOW OVERVIEW

SplitComp simply requires a standard playblast to work, along with a depth channel. Our playblast system automatically creates a companion depth channel for along side the standard color images.

The Artist can then open the SplitComp tool which is presented as a simple UI allowing them to choose which image sequences they want to use or to playblast new sequences.

The tool will then construct a composite using the depth of the images to generate a final image sequence consisting of the work generated by the artists, for example, a Lead Animator's

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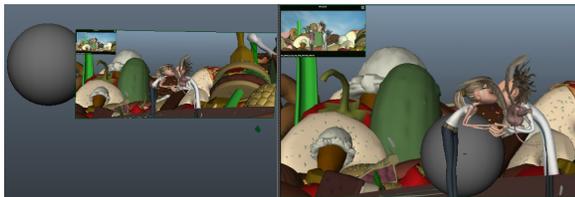
hero animation with several other animators' background character animation.

On average, the process takes between 5 to 10 minutes and requires no extra data, whereas previous collaboration methods required generating custom data and took between 30 minutes and several hours for scenes of similar scale.

## 2 OTHER CURRENT USES

Our tools also allow for a realtime composite of the image sequence inside the Maya viewport.

This allows artists to get a real time preview of what the other artists are doing, whilst being able to move their assets around the scene objects as if they were real geometry in the scene, while avoiding the overhead of actual geometry caches.



**Figure 2: The Data can also be composited inside the Maya viewport. Here the scene on the left is off axis, whereas the scene on the right is from the camera. This shows how the sphere is composited into the scene space position.**

This allows for fairly use-able, albeit limited, interactions between characters being animated by separate artists, for example a hero character moving around background characters.

## 3 CONCLUSION AND FUTURE WORK

This workflow has seen very quick adoption at Imageworks across multiple animated features. It's drastically cut down the time and work needed to keep up with the ever increasing complexity of production shots. That said, there is always room for improvement.

In the future, using the depth information may allow for easy review of the image sequences from angles other than the camera angle for quick witness cameras to verify the accurate scene space of the shot.

Additionally, using the 2d depth channel it may be possible to do other actions like dialing in stereo cameras without loading up a full stereo scene, or even allow easy isolation of characters for purposes like sketching on top of the specific character without having to generate extra data.

There's also room to explore real time compositing of images. Currently the majority of image processing happens offline. While this is still a quick process, it may be possible to create real time previews for artists.

This is all hypothetical but are avenues worth exploring.

## 4 ACKNOWLEDGEMENTS

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