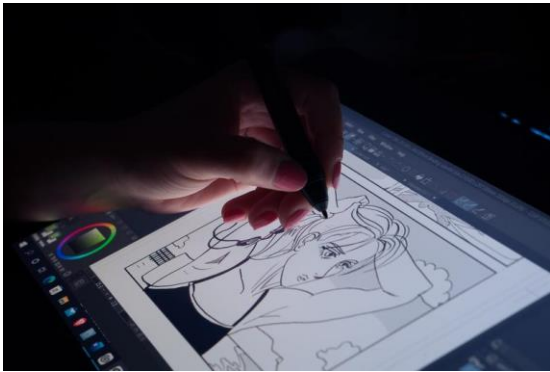


What Is Compositing?

- What is compositing?
- Manual compositing techniques
- Different types of VFX compositing
- Why use compositing?

What is compositing?



MarbellaStudio/Shutterstock

Compositing is the process of taking several visual elements from different sources and combining them into a single video. The video effects (VFX) technique is usually used to imply that the elements are from the same scene. Compositing mostly takes place in [postproduction](#), but it can also be done in-camera using mattes or LED screens during production.

Manual compositing techniques



“Un Homme de Têtes” Courtesy of Star-Film

Compositing used to be a time-intensive labor of love. [Manual compositing techniques](#) include:

Multiple or double exposures

Film compositing was first used in film at the turn of the 20th century, when director Georges Méliès used multiple and double exposures in “Un Homme de Têtes” and “Le Voyage Dans la Lune.” A multiple exposure is produced when two or more film frame exposures are layered to create a single image.

Similarly, a double exposure layers two images on the full film frame. In “Un Homme de Têtes,” Méliès splices a scene in which he removes his head and places it on a table, multiple times, then plays music with the heads. To achieve the full effect, he made a rudimentary matte, or a background image that indicates which parts should be visible and which parts should allow other images to show through. Méliès used a black glass screen so that part of the film would be left unexposed, and then shot over that. George Albert Smith and Edwin S. Porter also used double exposure to create composite images in their films.

Mattes

Following in Méliès’ footsteps, filmmakers including Norman Dawn, Frank Williams, and Auguste and Louis Lumière used other forms of mattes to create composite images. Mattes allow filmmakers to layer live-action footage and negatives with photographs to create the appearance that actors are at different locations.

Background projection

This technique projects a scene’s background onto plates to make it seem as though the two scenes are one. Think of an older film with a driving scene in which the background doesn’t quite seem to match—that’s background projection.

Manual chroma key

Other traveling mattes and wipes can be used to chroma key videos, a process that entails layering two videos together based on their hue. The process of manual chroma key compositing was refined by Petro Vlahos and Zbigniew Rybczyński, who implemented the use of green screens and optical printers. By 1980, Richard Edlund had created a Quad Optical Printer that expedited the chroma key compositing process.

Different types of VFX compositing



“Blade Runner 2049” Courtesy Warner Bros. Pictures

Today, compositing is easier than ever due to the power of technology. Digital compositing techniques include:

Green screen

The [green screen](#) technique uses chroma keying to remove color from an image and replace it with something else. When compositing with a green screen, the green is removed and replaced with the desired background.

This technique can also be used to depict real subjects in a fantastical universe, such as in “Alice in Wonderland”:

Rotoscope

Max Fleischer founded the 3D animation compositing technique when he started projecting photos of live-action movie shots onto glass panels using a rotoscope, and then traced over the image. Today, [rotoscoping](#) is done with computers to create highly detailed, accurate composite images.

The animated show “Undone” uses hyperrealistic rotoscoping. Director [Hisko Hulsing](#) told Backstage how this VFX compositing technique was used to depict the liminal space between reality and dreams. “The script [might say] something like, ‘the room falls into itself’ and then it was up to me and my team to come up with a visual representation of that,” Hulsing said. “We used [oil] paintings and projected them onto the 3D so the animation looks like it’s painted. It wasn’t so much me as a director but more as [the] production designer to make sure everything had the same look and then we had a team of compositors who brought all the layers together—line animation, colors, shading—to make it look [like] one cohesive world.”

Photoshop and analogues

[Video editing software](#) such as Photoshop allows editors to create composite videos by layering or painting on top of film frames.

Why use compositing?



“Black Widow” Courtesy Marvel Studios

Compositing is used to create the illusion of a cohesive image that extends past the actual image reality. It can be used to:

- Create multiple depictions of a single actor in one scene, such as in “The Parent Trap”:
- Place different backgrounds behind a character, such as in “Aquaman”:
- Add a new element into an already-existing image, such as in “Jurassic World”:

No matter what it’s used to depict, compositing allows multiple visual worlds to merge into one.

Introduction

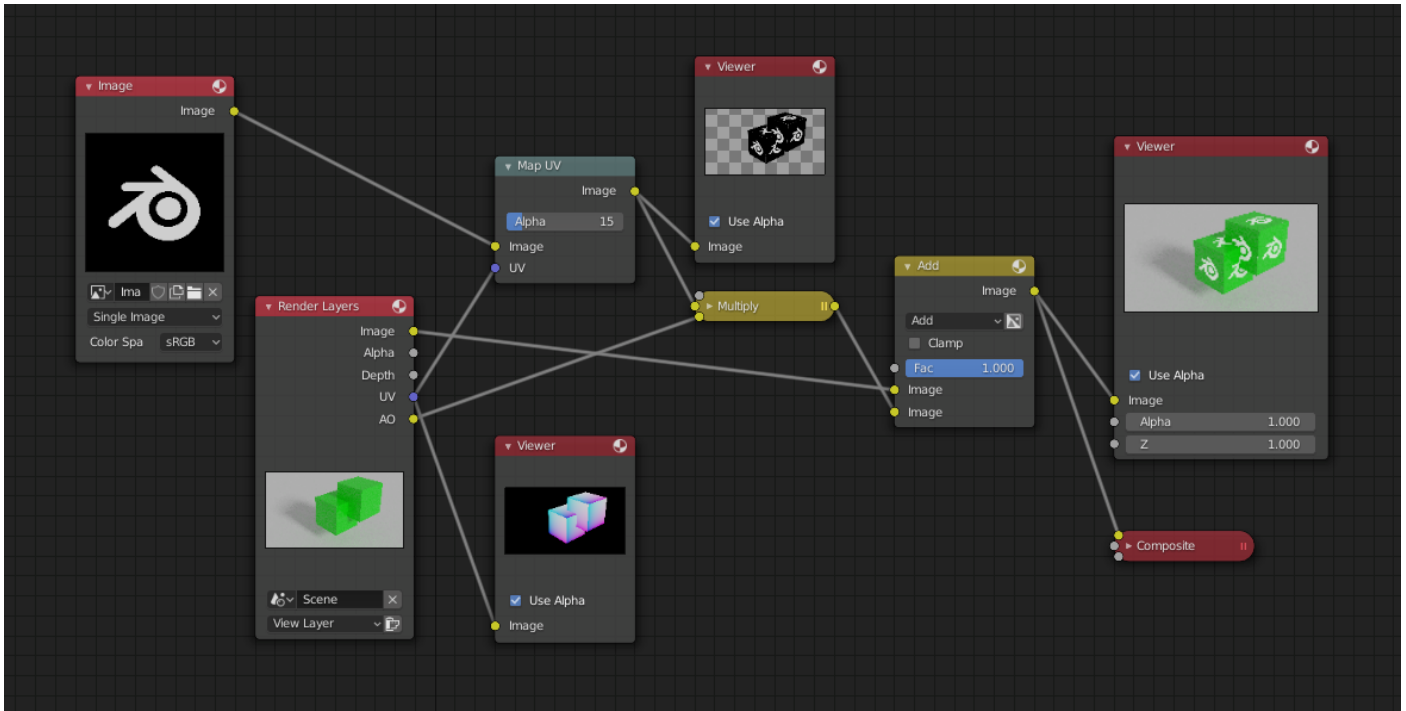
Compositing Nodes allow you to assemble and enhance an image (or movie). Using composition nodes, you can glue two pieces of footage together and colorize the whole sequence all at once. You can enhance the colors of a single image or an entire movie clip in a static manner or in a dynamic way that changes over time (as the clip progresses). In this way, you use composition nodes to both assemble video clips together and enhance them.

Note

Term: Image

The term *Image* may refer to a single picture, a picture in a numbered sequence of images, or a frame of a movie clip. The Compositor processes one image at a time, no matter what kind of input you provide.

To process your image, you use nodes to import the image into Blender, change it, optionally merge it with other images, and finally, save it.



An example of a composition.



An example of color correction.

Getting Started

Access the *Compositor* and activate nodes for compositing by clicking the *Use Nodes* checkbox in the header

Note

After clicking *Use Nodes* the Compositor is enabled, however, it can also be disabled in the [Post Processing](#).

You now have your first node setup, from here you can add and connect many types of [Compositing Nodes](#), in a sort of map layout, to your heart's content (or physical memory constraints, whichever comes first).

Note

Nodes and node concepts are explained in more detail in the [Nodes](#) reference.

Examples

You can do just about anything with images using nodes.

Raw footage from a foreground actor in front of a blue screen, or a rendered object doing something, can be layered on top of a background. Composite both together, and you have composited footage.

You can change the mood of an image:

- To make an image 'feel' colder, a blue tinge is added.
- To convey a flashback or memory, the image may be softened.
- To convey hatred and frustration, add a red tinge or enhance the red.
- A startling event may be sharpened and contrast-enhanced.
- To convey a happy feeling add yellow (equal parts red and green, no blue).
- Dust and airborne dirt are often added as a cloud texture over the image to give a little more realism.

Image Size

It is recommended to pay attention to image resolution and color depth when mixing and matching images. [Aliasing](#), color *flatness*, or distorted images can all be traced to mixing inappropriate resolutions and color depths.

The Compositor can mix images with any size, and will only perform operations on pixels where images have an overlap. When nodes receive inputs with differently sized Images, these rules apply:

- The first/top Image input socket defines the output size.
- The composite is centered by default, unless a translation has been assigned to a buffer using a *Translate* node.

So each node in a composite can operate on different sized images as defined by its inputs. Only the *Composite* output node has a fixed size, as defined by the settings in Output

Properties ▸ Render ▸ Format. The *Viewer* node always shows the size from its input, but when not linked (or linked to a value) it shows a small 320×256 pixel image.

Saving your Composite Image

The *Render* button renders a single frame or image. Save your image using Image ▸ Save Image or Alt-S. The image will be saved using the image format settings on the Render panel.

To save a sequence of images, for example, if you input a movie clip or used a Time node with each frame in its own file, use the *Animation* button and its settings. If you might want to later overlay them, be sure to use an image format that supports an Alpha channel (such as PNG). If you might want to later arrange them front to back or create a depth of field effect, use a format that supports a Z-depth channel (such as EXR).

To save a composition as a movie clip (all frames in a single file), use an AVI or QuickTime format, and use the *Animation* button and its settings.

References:

<https://www.backstage.com/magazine/article/what-is-compositing-75596/>

<https://docs.blender.org/manual/en/latest/compositing/introduction.html>