Transcript

Depth of field

Depth of field short formed (DoF) is an important term used in photography. Understanding the concept of DoF and recognising what factors affect it and utilising this knowledge in creative photography is what professional photographers should master. While taking a picture using a DSLR camera one chose a point of focus (where actually the lens is getting *focused).* But there is also an area both *in front of*, and *behind*, the point of focus that *also* appears sharp. Normally this patch of area wherein the image is in sharp focus is considered as depth of field. Or in other words Depth of field is the distance between the closest and farthest objects in a photo that appears acceptably sharp. However the transition from sharp to unsharp is gradual, and the term 'acceptably sharp' depend on the photographer and his requirement.

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As regards the depth of filed there can be two kinds of scenarios.

1. Deep depth of field

Images that are sharp from front to back are considered to have a *deep depth of field*. A deep depth of field is popular in landscape photography, wherein one often wants to showcase an overall picture instead of a highlighted subject.

Shallow depth of field

Shallow depths of fields are visible in images with very *small* zones of focus. In Shallow depth of field pictures, the subject is prominently noticeable due to its tack-sharp focusing, within a smooth, creamy and blurs background.

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Importance of depth of field

The amount of sharpness in a photo is a *key to an artistic creation.* Whether an image has a shallow depth of field or a deep depth of field can make a huge difference .For instance in a portrait photograph a shallow depth of filled can be of advantage to hide or morph the distracting background. A landscape with a beautiful foreground, a stunning midground, and a jaw-dropping background can be effectively captured in a deep depth of field setting.

Factors affecting depth of field

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There are three main factors that determine depth of field. They are:

1. Aperture (f-stop)
2. Distance between lens and subject
3. Focal length of the lens

Aperture

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Aperture is the opening in lens that lets light pass through to the sensor.

Large apertures, which are correlative to small f-stop numbers, produce a very shallow depth of field. On the other hand, small apertures, or large f-stop numbers, produce images with a large depth of field.

So while photographing a landscape and the need is a deep depth of field, one may have to set the aperture to a higher value say f/16 or f/18.This enables the camera to capture the picture with a foreground-to-background in sharpness. While photographing a portrait and the requirement is a shallow depth of field, set the aperture to a lower value, say f/2.8 to blurred the background..

Camera-Subject Distance

Another important factor affecting depth of field is the distance between the camera and the subject. The closer your subject is to the camera, the shallower your depth of field becomes provided the focus is on the subject.

So if one gets close to a flower while photographing it, the depth of field will shrink. and the picture taken at a distance ten steps backward, will have an increased depth of field .When photographed very close to a subject, the depth of field shrinks regardless of the aperture

Focal Length of the Lens

Wide-angle lenses (short focal lengths) have a deeper depth of field than telephoto lenses (long focal lengths) at the same camera-subject distance. However it is possible to manipulate depth of field by changing the camera – subject distance and create desirable images. Or in other words focal length does not actually influence DoF if one can change camera-subject distance so that the magnification of your subject is the same.

Let us Put it all together

Aperture, distance to subject, and focal length *together* determine the achieved depth of field. That means the three factors can combine to produce a very extreme depth of field effect, or they can cancel each other out.

For instance, a photo shoot at f/2.8, at close distance to a subject, using a telephoto lens, can achieve an ultra-shallow depth of field.

But if one gets closer to a r subject while using a wide-angle lens, the two factors will generally cancel out, resulting in a medium depth of field.

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Work with depth of field

While knowing the theory is great, one must also understand how to apply depth of field while shooting

Here's a quick step-by-step approach for achieving a desired depth of field

Step 1: Set your camera to Aperture Priority or Manual mode

Most cameras only offer two modes where you can easily control the aperture and therefore the depth of field. Manual mode will let one select the aperture and shutter speed independently for greater creative control.)

Step 2: Determine whether you want a deep or narrow depth of field

In general,if the background is *distracting*, it's best to use a shallow depth of field. On the contrary if the background *adds* to the scene (eg. beautiful clouds, a stunning mountain range, or it contributes valuable context – then use a deep depth of field.

Step 3: Adjust your aperture, distance to subject, and focal length

Now that the depth of field effect is decided make the relevant changes to composition and/or camera settings.

If the goal is a shallow depth of field effect, set the lens to its widest possible aperture. Then get close to the subject and take the photograph.

If the goal is to achieve a deep depth of field effect, use a wide-angle lens and get as far back from the subject as one can without sacrificing the composition. Then dial in a narrow aperture – often f/8 or beyond is ideal, and take the photograph.

Step 4: Check to make sure you got the depth of field right

Take a quick look at the image in playback mode. If your goal is to keep the entire shoot sharp, magnify the photo to check the nearest foreground object and the most distant background object, just to be sure everything looks good.

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Potential usage scenarios of a shallow depth of field

A shallow depth of field will make subject stand out from the background. Here are a few situations when a shallow depth of field often makes sense:

- In a portrait photography when one wants to emphasize the subject's features
- In wildlife photography, where the animal needs to stand out
- In sports photography, where in the athlete is in focus
- In a macro photography, when one wants to focus the viewer on specific object.
- In event or street photography, wherein one wants to isolate an individual in a chaotic environment

Note that using a wide aperture for a shallow depth of field will also increase the amount of light hitting the sensor, which will in turn allow the camera to boost the shutter speed. This is a major benefit while shooting in low light or ultra-fast shutter speeds to freeze the action.

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Potential usage scenarios of deep depth of field

A deep depth of field provides context, highlights, small details and makes scenes appear more lifelike. Here are some situations when a deep depth of field is most excellent

- In landscape photography, wherein the photographer wants to lead the viewer from foreground to midground to background with interesting foreground and stunning background features.
- In macro photography, wherein the work is at high magnifications without compromising on subject sharpness.
- In street photography scenes with a clear emphasize on busyness and chaos
- In architectural photography, when you want to show off an entire building or highlight an entire interior.

In conclusion we are ending this module with a hope to achieve better understanding on the topic depth of field.