Photzy

WHY YOU NEED TO UNDERSTAND YOUR CAMERA

Quick Guide

Written by Karthika Gupta

With each passing year, cameras in the market seem to be getting smarter and smarter day by day. Your DSLR camera is a sophisticated piece of machinery capable of some really cool things. So why is it that you are still using your camera in the most basic way (i.e. using auto mode and letting your camera make all the decisions for you in terms of the type of images you can take)?

While I understand that all the options available in today's cameras can be extremely overwhelming and complicated, I want to share with you a few reasons why taking the time and making the effort to learn the workings of your camera will be extremely beneficial in the long run.

What you will learn in this guide:

- How the design of the camera body can affect your picture taking
- The difference between different types of lenses
- The different camera sensors and what they bring to your photography
- The importance of the memory card: style and speed
- A few of your camera's functions and why they are SO important

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Photograph by Karthika Gupta

A compact point-and-shoot or even a smaller DSLR is a great option for an everyday walking-around lens, especially when you are traveling or out and about all day.

CAMERA BODY

There are many different types of cameras out there in the market today. At the most basic level you can either have a point-and-shoot camera (where the lens is permanently attached to the camera body) or a DSLR (where the lens can be removed from the camera body).

The body is considered the housing for your camera. While it has little effect on the quality of your photos, it does affect things like ease of use and comfort. The bigger the body, the more expensive it can be and, more importantly, the heavier it can be.

Camera body design can affect the user in many ways. First, the size of the body can have a major impact on user comfort when being held and used. Small hands can have difficulty with larger camera bodies and, similarly, large hands can have difficulty with smaller camera bodies. Before purchasing a camera, it's a good idea to hold it and take a few pictures so you know if you'll find it comfortable to use with regularity. Also consider what

the primary use of the camera is. Are you using this camera for photos around the house or even around town? Perhaps a smaller, more compact body is more useful to you as it is easy to carry around town. Are you primarily using the camera on a tripod so there are very few instances when you will be walking around with the camera around your neck? In this case, perhaps a larger camera body is not an issue. I use a Canon 5D MK III and there have been instances when I am traveling and really wished I had a smaller camera body for my main camera because carrying this heavy camera for extended periods of time was not practical.

Size often impacts the location of buttons, dials, and other parts of the hardware you'll need to touch and press to operate your camera. The position of the buttons on small point-and-shoot cameras tends to be simple, because there are fewer hardware controls. Often one button has a few different functions based on which other button is selected. On higher-end DSLRs, the extra body space means more room for the buttons and the key buttons can be easily accessible. While this might seem like a generalization, make sure to test out the camera and see how easily accessible the buttons are, especially when you have the camera up to your face. Also remember that in most cases, the camera is likely to be up to your face as you look through the viewfinder to take a photo. This is why it's important to know where the buttons are and how easy they are to find even when you are not looking directly at the camera.

While most cameras are fairly similar, the little differences in body design can have a significant impact on their ease of use. You should test it out to make sure it feels right and comfortable for you.

Photograph by Karthika Gupta

A wide-angle lens was useful here to capture both the house and the street to give some context to the location I was photographing.

CAMERA LENS

The lens is the eye of the camera, and it's a very complex instrument. Different lenses can provide many different features, so it's important to know the differences between them. Lenses come in different focal lengths as well as different apertures. These typically determine if the lens is a basic, intermediate, or advanced one which in turn affects the price and quality of the lens. Certain types of lenses are better for certain situations. At the most basic level, lenses are classified into prime lenses and zoom lenses. Zoom lenses let you zoom in and out, adjusting the focal length without you actually moving. These are great to get a range of photos at different distances without changing lenses. Because they have the ability to zoom in and out, there are more moving parts to the lens and hence they tend to be more expensive, heavier, and sometimes larger. Prime lenses, on the other hand, do not allow you to zoom, but they're often cheaper, lighter, and smaller. You can of course zoom with just your feet – moving closer or further away from your

subject to get the desired image. Because there are fewer moving parts, prime lenses tend to be lighter in weight than zoom lenses. Many people also feel that prime lenses provide sharper images than zoom lenses at lower price points.

Lenses are also categorized as wide-angle, standard, medium, telephoto, and ultra telephoto lenses. These terms are all based on a lens' focal length. Focal length is typically measured in millimeters and you can think of it like the amount of magnification. A low number is similar to being zoomed really far out, and a high number is zoomed really far in.

Wide-angle lenses are essentially any lenses with a focal length of up to 35mm. The wider the lens (and lower the focal length), the more the lens can see. Fisheye lenses are extremely wide and often have a rating of around 8-10mm. A regular wide-angle lens is generally around 14-28mm. In layman's terms, wide-angle lenses capture more stuff in the frame but also add some distortion around the edges. This is something to keep in mind if your primary goal in photography is to capture landscape images or even indoor/outdoor real estate images.

Standard lenses are generally between 35-50mm and tend to most closely represent space the way the human eye sees it. Wide-angle lenses tend to distort space and add the appearance of more depth. Telephoto lenses flatten space. Standard lenses are the middle ground and produce images that look realistic to most people. A 50mm prime lens is often considered the optimal focal length for most photographers no matter the genre. They tend to work really well for portrait photos, travel photos, landscapes, and close-up images. Standard lenses are the most versatile lenses.

Medium lenses generally fall into the range of 60-100mm and are generally not a type you'll want as a prime lens unless you have a specific purpose in mind.

Telephoto lenses are useful for zooming in really far. Pretty much anything over 100mm is considered a telephoto lens, and anything over 400mm is considered an ultra-telephoto lens. These lenses tend to be big, heavy, and expensive. They are typically used for sports photography and wildlife photography. Because these lenses tend to be heavy, hand-holding them for an extended period of time is impractical and you almost always need to have a tripod handy. Hand-holding a heavy lens will cause camera shake because the hands tend to shake when lifting something heavy. This will cause your images to be blurry.

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On the other hand, an ultra telephoto lens at 400mm was used to capture these migrating flamingos and birds at a popular birding spot in India.

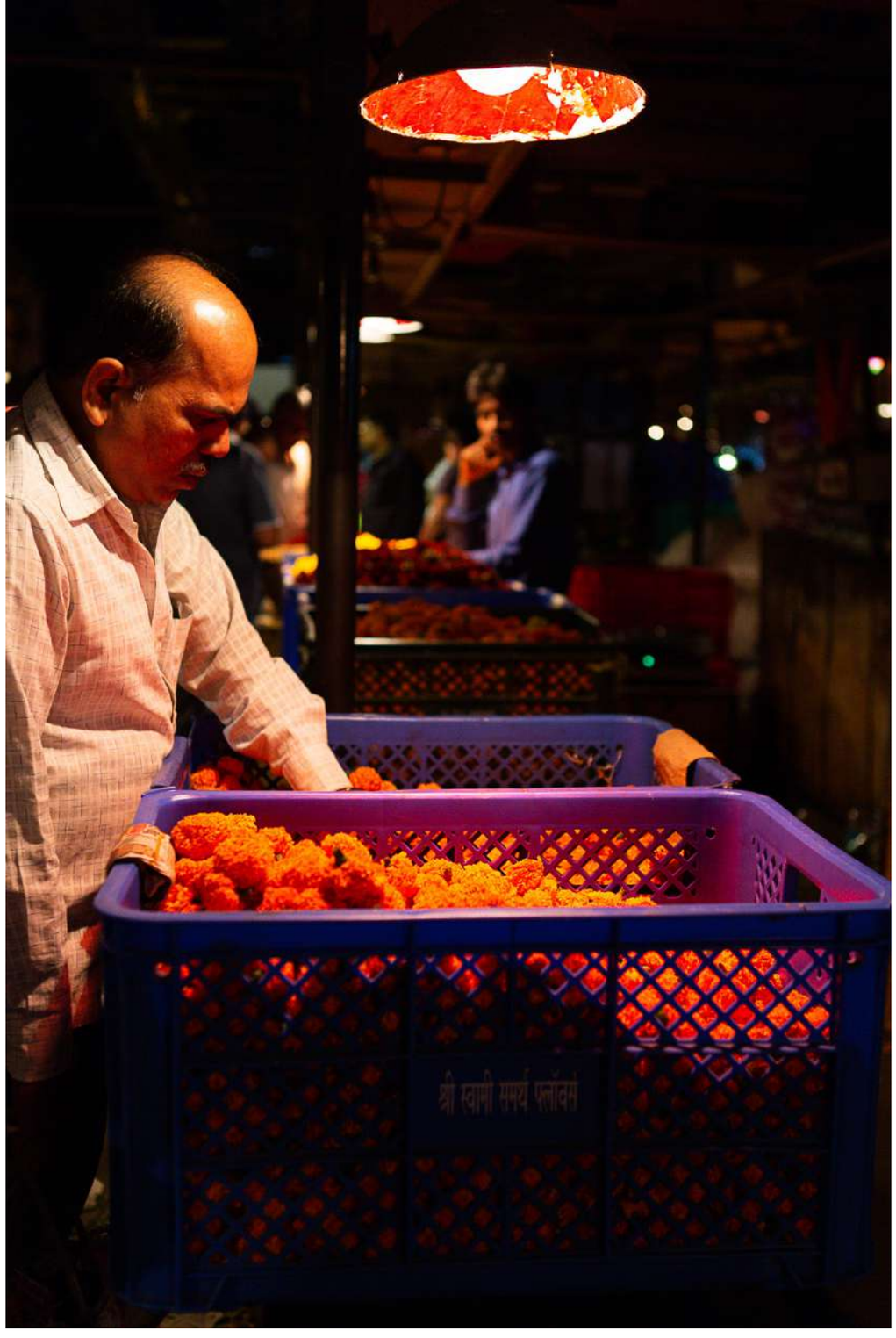
Photograph by Karthika Gupta

A full-frame sensor is closest to a 35mm film camera frame.

CAMERA SENSOR

The sensor in the camera is basically the digital version of old-school film. The sensor, when exposed to light that comes through the lens, helps record the frame. In 35mm film cameras this would be the image/ exposure that is written on the film. In digital cameras this information is written to a card in terms of pixels. The sensor is the part of your camera that captures the light exposure filtered through the lens. First of all, the size of the sensors does matter. Compact point-and-shoot cameras have very small sensors and the difference in sensor size is not too important when choosing a point-and-shoot camera. But when it comes to a DSLR camera, sensor size has a greater impact. Generally speaking, larger sensors provide better low-light performance, greater control over depth of field, and produce higher resolution images with less noise than a smaller sensor.

Another distinction in DSLR cameras are full-frame versus crop sensors. Full-frame sensors are the equivalent to the size of a frame of 35mm film, whereas a crop sensor will provide a crop factor to the images. Crop-sensor cameras tend to be less expensive than full-frame cameras because of this crop factor. While crop-sensor cameras are cheaper, that does not mean they are of lesser quality. More often than not, for general amateur photographers, a crop-sensor camera with a good-quality lens is gold!

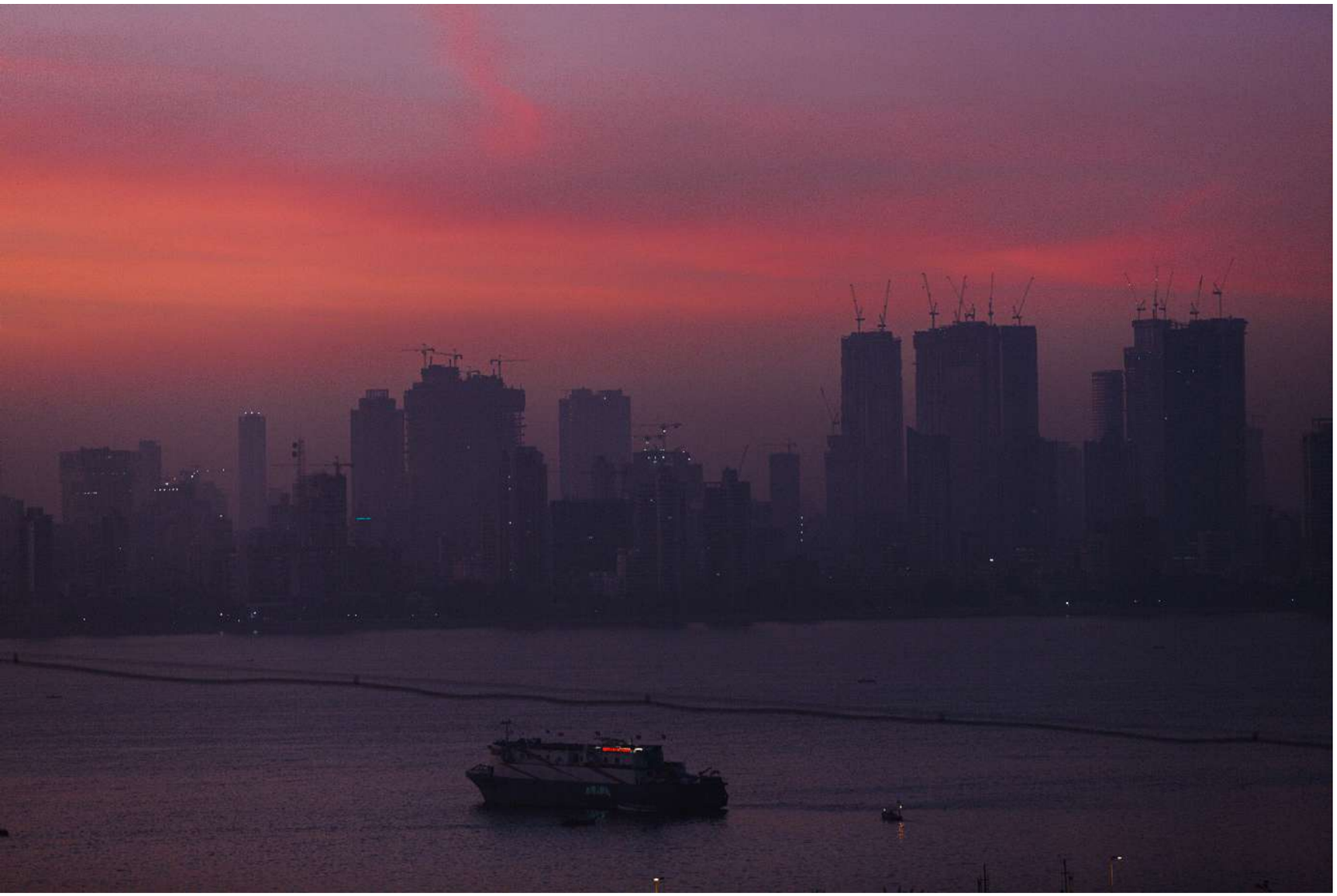


Photograph by Karthika Gupta

In low-light situations, I like to take multiple shots so that I have at least a few images that would be sharp and in focus, especially if I am hand-holding my gear because of lack of space to move around or my setup is on a tripod.

CAMERA MEMORY CARD

The memory card is a critical piece of a DSLR. This is where your photos are stored. Cards come in SD format or Compact Flash format and also vary in speed to processing. Memory cards range in read-and-write speeds as well, however, and a slow card can significantly degrade your camera's performance. The speed of your flash card is important because it controls the speed with which the images get written along with the frames per second of the camera. The frames per second, or 'fps,' essentially is how many images the camera will record when the continuous mode of operation is selected. Think of situations where you have a fast-moving subject and you want to make sure you capture the subject in motion. By continuously photographing or clicking the shutter, you can get the fast-moving subject at all points of motion. This is where fast camera cards come into play. You can take many images in rapid succession, but if your card has a slow write speed then it can't keep up. For SD cards you'll be best served by a Class 6 card. For CompactFlash, a card rated at 133x should do just fine.



Photograph by Karthika Gupta

CompactFlash cards are often used in higher-end DSLRs because they're capable of faster speeds at a lower cost, because they are physically larger.

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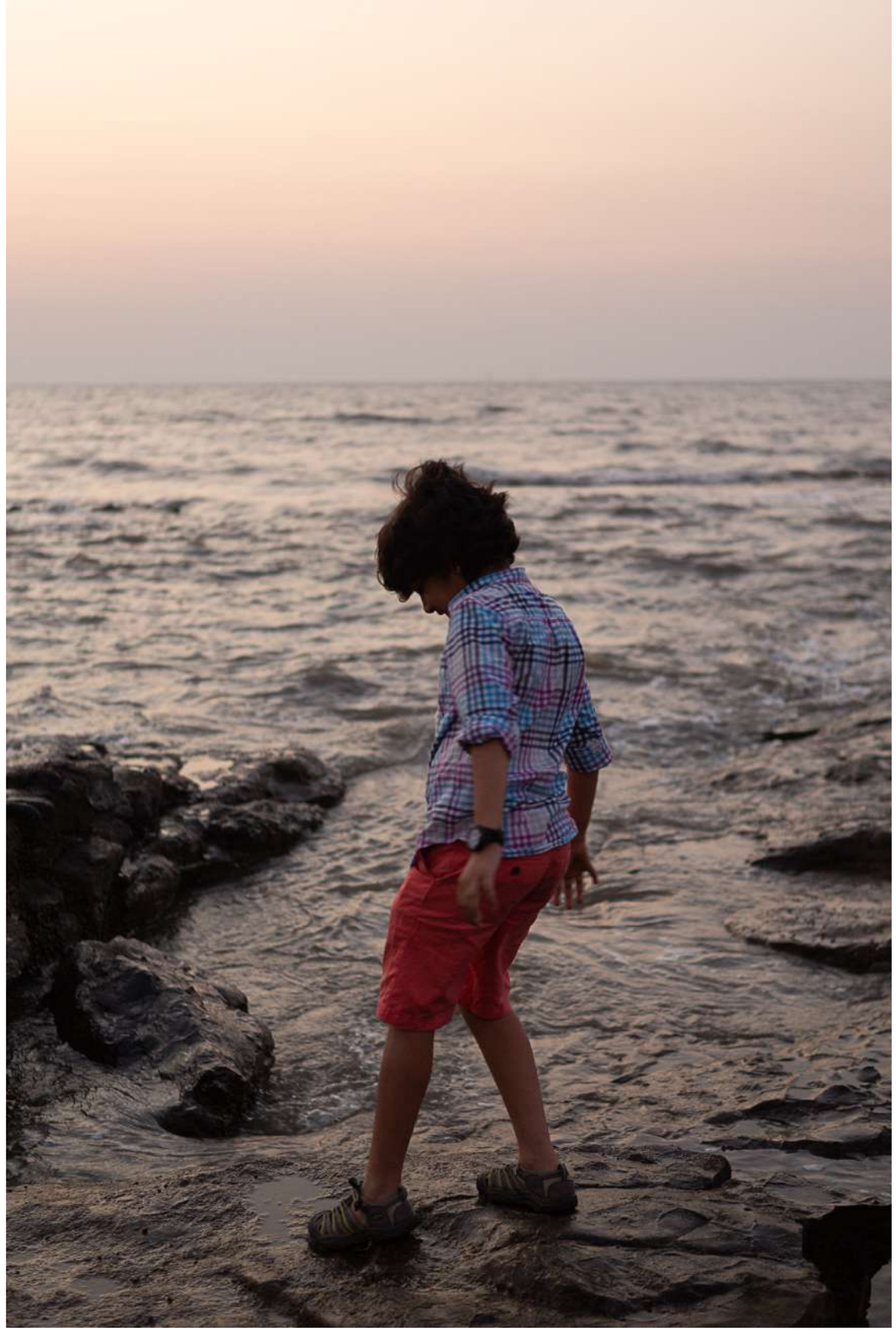
I wanted to capture movement and motion in this frame. By slowing down the shutter to 1/20 of a second, I was able to keep some elements sharp and others in motion blur.

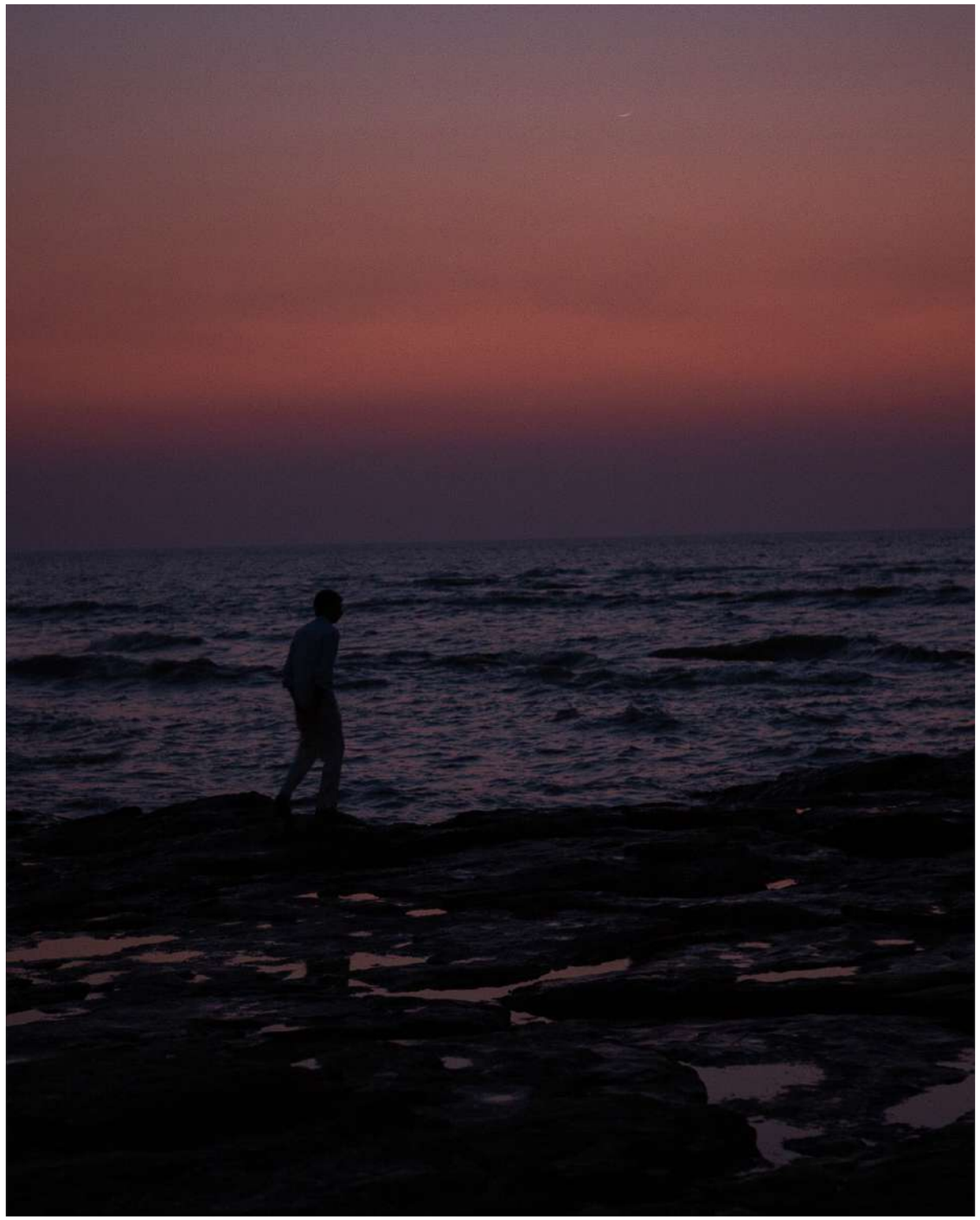
CAMERA FUNCTIONS

While knowing the physical workings of your camera is important, knowing the internal capability of your gear is priceless. After all, it is no good knowing all the camera specs when you don't know what your camera is capable of when you are out and about in the field. And the only way to know how to accurately operate your camera is to use it to take pictures consistently and in varying situations. Knowing how many fps your camera can correctly handle is critical in sports or wildlife photography when your subject is moving suddenly. Knowing the focal length at which you typically like to photograph will only be possible when you photograph in varying focal lengths as practice. Knowing the focal length at which you can hand-hold without camera shake is important to decide if you want to invest in a tripod or not. And knowing the point at which you use a flash can only be determined once you understand the low-light capabilities of your camera.



Photograph by Karthika Gupta

I wanted to capture my son and the sunset, but using the camera in auto mode resulted in the subject not being properly exposed and the background blown up, losing the beautiful color in the sky.



Photograph by Karthika Gupta

Instead, I used manual mode and by underexposing the image I was able to capture the beautiful sunset colors and have the subject as a silhouette.

I am a big proponent of photographing in manual mode. This is the setting where I, as the photographer and the user, tell the camera what focal length, aperture, and ISO to use for a particular image. This is the best setting that gives the user the most creative control over their imagery. Manual mode does take time and a lot of practice, but the good thing is that with memory cards being relatively cheap, taking thousands of photos for practice does not cost much other than time. And time to perfect your art is time well spent.

Self-Check Quiz:

1. What is the main advantage of the DSLR camera over a point-and-shoot camera?
2. Which type of camera is generally the heaviest?
3. True or False: With a smaller camera body design, the size of the buttons can become an issue when using the camera.
4. What is a prime lens?
5. Name the four categories of lenses discussed in the Quick Guide.
6. Which camera sensor is the closest in size to a frame of 35mm film?
7. True or False: Crop-sensor cameras are generally more expensive.
8. What is the most important consideration for a memory card?
9. True or False: Manual mode can be learned quickly and easily.

ABOUT THE AUTHOR

Karthika Gupta is a wedding, lifestyle, portrait, and editorial photographer based in Chicago. Her style of photography is fun, fresh, and organic. She strives to capture authentic emotions and interactions among her clients and emotive imagery in her commercial work.

She loves connecting with other creatives and photographers and is always ready for an engaging conversation about photography and the art of storytelling.

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Congratulations! You've completed this Photzy guide!

If you liked this tutorial, check out our step-by-step guide on discovering photography skills using your DSLR and start creating amazing images: DSLR Crash Course.

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