A brief Explanation of Image Metadata Standards

What are image metadata (EXIF, IPTC, XMP)?

In this article, we are going to learn what metadata are. In particular, we will briefly explain what image metadata are and what they are used for. You will thus understand the importance of managing your photos' metadata and why a having tools to manage your photos metadata essential for everyone sharing content on the internet.

What are metadata, and how are they stored?

The data in an image file are made up of several blocks of information. The most important block for an image is obviously the block containing the pixels of the images. Other blocks are often available containing textual information such as the camera's name, the GPS coordinates, and the date of the shoot. This extra information is called "image metadata." Metadata can be of many types and can include a variety of information. Moreover, these are independent of the pixels of the images and can be corrected without degradation of the pixels.

What are the uses of metadata?

Providing technical details

One use of metadata is to provide technical information. The camera automatically generates technical metadata. It includes details about the camera's manufacturer, model, and settings such as ISO number, shutter speed, flash on / off, aperture, and more. It can also include the GPS location of where the image was created, along with the date and time.

Describing photos

Another use is to describe images. Descriptive metadata is mostly manually added through some imaging software, such as MetaImage. It can include the name of the photographer or creator, keywords, captions, or comments. Descriptive metadata makes the image easier to search. For example, metadata allow software like Apple Photos to index, sort, and find your photos using keywords.

Sharing photos

The last use we are going to present is for the administration. Administrative metadata are also mainly added manually. It includes rights about the image's usage, licensing, and restrictions on reuse or copying. These data allow you to inform to whom you share your files their right without attaching additional documents.

What are metadata standards?

Metadata are included in your files in a textual format. Several companies have developed several formats over the years. So if you want to change the image description, there is not just one metadata tag but several. It's up to you to choose which tags to edit according to your needs. The three primary standards are EXIF, IPTC, and XMP. We have them detailed below. You should also note that each camera vendor has its metadata format alongside other metadata.

EXIF metadata

The "Exchangeable Image Format," or EXIF, is used for storing a variety of information. EXIF data is often generated by modern digital cameras as an image is saved. For example, most cameras record the date and time, camera name, lens name, shutter speed, film speed, and many other technical details about the image as it is being saved. Some cameras include GPS location. A thumbnail for previewing the photo on the camera's screen and file managers on computers may also be included. Nearly all phones and digital cameras support this standard in some form for the images they create.

XMP metadata

The "Extensible Metadata Platform" (XMP) is an ISO standard created and adopted by Adobe Systems Inc. XMP is different from EXIF in that it does not contain basic details about the image or the camera. Instead, XMP metadata helps in the processing and interchange of image files. XMP files store information about the changes made to your image in post-processing. For example, Adobe Lightroom saves metadata about the image's manipulation as a separate XMP file, also called a 'sidecar' file, because it is connected to your original image file and not embedded within it.

IPTC metadata

IPTC stands for International Press Telecommunications Council. It is a standard created in the early 1990s to assist in the exchange of data among media and news agencies. Since then, it has been continuously updated and is mainly used to contain a title, description, keywords, photographer's information, copyright restrictions, and much more. Many stock image agencies and search engines use the IPTC standard for searching, sorting, and protecting images. IPTC is generally thought to useful for copyright protection.

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