

June 28, 2024

Efforts to Improve Trustworthiness in the Use of Artificial Intelligence (AI) Technology

1. Introduction

AI technology, which continues to make remarkable progress, has been widely used in various aspects of society in recent years. In the field of image processing, in particular, advanced generative AI technology, which is showing rapid progress, has made it possible to easily create images that are generated and processed with the same level of detail as real photographs. It has become a powerful tool to enhance our understanding and awareness through visualization of events that are difficult to photograph or that do not actually exist. In digital cameras, such AI technologies are used for scene detection, image recognition, and image processing during shooting, which not only contribute to improved image quality but also make it possible to capture high quality images and video in situations that are difficult to capture with conventional technologies. As these examples show, the use of AI technology in digital cameras is expected to further expand the possibilities of image/video applications in society.

On the other hand, advances in generative AI technology have made it possible to easily and inexpensively create high-definition images and video that are indistinguishable from images and video captured by digital cameras, and inducing public opinion through the spread of fake images and videos has become a social issue. In addition, AI image processing in digital cameras may unintentionally record images and video that are different from real events, which may cause problems depending on the intended use of the images and video. These are issues related to the trustworthiness of images and video captured by digital cameras, and are risk factors that cannot be overlooked by camera manufacturers, who have been focusing on enhancing their ability to “capture the truth.

2. CIPA's Basic Position on AI

There is a high affinity between image processing and AI technology, and CIPA has a great interest in the trend of AI technology. Currently, AI technology is used in digital cameras to analyze the shooting scene and record and reproduce the subject as faithfully and in high definition as possible, and is also used to generate images and videos in which the photographer/videographer intentionally emphasizes or edits real events to enhance artistic and creative aspects. In this respect, AI technology has the potential to add value

to digital cameras and improve user convenience, and CIPA believes that the development of AI technology by camera manufacturers should not be hindered.

On the other hand, as mentioned in the previous section, one of the negative aspects of AI technology is the risk of damaging the trustworthiness of images and video captured by digital cameras. In order to minimize this risk and improve the trustworthiness of images and video captured by digital cameras, CIPA has decided to take the following actions as an association of the majority of digital camera manufacturers in the world.

3. efforts to improve trustworthiness in the use of AI technology

(1) Ensuring transparency in the use of AI technology in digital cameras

It is considered effective to ensure transparency in the use of AI technology if the photographer/videographer can recognize in which cases AI processing is performed. This will allow the user to control the camera and take pictures according to his/her intention. It is also important to properly disclose the AI functions of cameras to avoid misleading customers in order to maintain fair competition among manufacturers. For this reason, CIPA will consider ways to inform customers what kind of processing is performed using AI technology in digital cameras.

(2) Authenticity of images and video captured by digital cameras

As the flood of false information generated by AI has become a social issue, there is a need to establish and disseminate technologies to prove the authenticity of digital content. In order to meet this demand, CIPA will consider standardization of technologies and mechanisms to enable verification of the authenticity of images and video captured by digital cameras, for example, by using cryptography to provide information at the time of capture.

(3) Consideration for copyright

With regard to copyrights of images and video used in AI machine learning during the development of digital cameras, it is desirable to consider the wishes of the copyright holders on the responsibility of respective camera manufacturers. On the other hand, CIPA will consider a function or mechanism to embed the author's intention to use for AI's machine learning in image files, since photographers/videographers who own

copyrights have concerns about their own works being used for AI's machine learning without their permission.

4. Conclusion

CIPA will improve the trustworthiness of images and video captured by digital cameras through the above efforts, and will actively contribute to the promotion of the appropriate use of images and video in society.

Contact: CIPA Secretariat e-mail: ai_info@cipa.jp
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