

Artificial Intelligence in Photography

A Recommendation for Rule Changes

By Gracie Allen

A photograph is created by using a camera in which light is focused onto a photosensitive surface, historically photographic film, most often today a digital image sensor. The latent image is made visible by chemical treatment or stored digitally.

Generally, the most permanent and visible method of preserving photographs is by printing.

Artificial Intelligence (AI) has caused a seismic shift in the photography world. Artificial Intelligence simulates human cognition and intelligence on a computer. It learns and retains information as it develops.

Machine learning (ML) is a subset of AI that imitates the way humans learn, gradually improving the AI.

Disclaimer

Official information about precisely what form the use of Artificial Intelligence (AI) takes in post-processing tools has been difficult to find. In some cases, the tool (in the case of Photoshop, Generative Fill for example) can be used with a user-initiated prompt to generate new elements for photographs or complete computer-generated artwork. For most tools, however, the information has been limited to acknowledging that the tools are accessing the AI (Adobe Sensei), but not to what extent.

Consequently, the information here may be inaccurate, incomplete, or out of date.

Summary

This document assesses the impact of AI on photography clubs and recommends a rule change for managing this evolving environment. It highlights the need for photography clubs to act proactively to quickly establish rules regarding AI usage.

The recommendation is to adopt rules that provide an explicit distinction between the use of AI for image optimization and that of creating AI-generated content. It allows the use of AI-driven tools for image cleanup, optimization and enhancement while restricting user-initiated AI-generated content to computer generated art (synthography).

By taking a proactive approach to rulemaking, photography clubs can balance the need for members to master a wide range of photographic tools and techniques, including the use of AI-driven technology, with the preservation of photography's artistic essence, helping ensure fair competitions.

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Introduction

Photography today is not just about capturing images. It is also about leveraging technology to optimize those images and make them as close to perfect as possible. I believe a generalized approach to managing the issue of “photograph” versus “computer generated art” (synthography) is preferable to attempting to isolate and determine how each tool’s use should be governed. As much as is practical, rules should be outcome based, not tool based.

The rapid integration of Artificial Intelligence (AI) into photography has reshaped the way we capture and process images. Photography clubs need to establish clear guidelines governing the use of AI in their competitions.

The Influence of AI on Photography

AI, in modern image capture devices (smartphones and digital cameras), has become an integral part of the photographic process. AI-driven features ranging from facial recognition to computational photography have increased the capabilities of these devices. This has raised questions about the authenticity of images in the current environment.

Note: For smartphone cameras, it is difficult to find specific information the amount of automated and/or autonomous generative AI (not under user control), or the amount of in-camera processing that uses generative-AI, but recent examples indicate it is significant.

In contemporary smartphones, for example, AI can detect the main content in a scene then modify the image to simulate shallow depth of field, bringing the subject into sharp focus while blurring the background. Other features like HDR (High Dynamic Range) imaging, depth perception, low-light processing, element replacement and many others also make use of AI.

Some smartphones use computational photography to overcome many of the reasons cell phone cameras have historically created lower-quality output. These smartphones use automated AI in-camera to create output that rivals that of many digital cameras.

The output of these smartphones is sometimes referred to as computer generated art (synthography).

For an image from a smartphone to be considered a photograph, it would have to be a RAW image taken directly from the smartphone camera’s sensor without in-camera processing, as it is with a normal digital camera.

The Impact of AI on Post-Processing

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Post-processing tools like Adobe Lightroom and Photoshop (as well as tools from other manufacturers) rely on AI to streamline processing, reduce time spent on mundane tasks, improve correction of flaws and imperfections, and improve overall image optimization.

The tools can also be used to synthesize entire, realistic looking images, and create or modify elements of an image with components not captured by the photographer. These changes transform the image from a “photograph” into “computer generated art”, making the image ineligible for use in many competitions. The extent to which AI has become pervasive in post-processing tools is not fully understood.

The Role of Umbrella Organizations

Umbrella organizations, such as the Photographic Society of America (PSA), have, or may be establishing, rules governing AI use in photography competitions. However, these rules are likely to be overly restrictive and not align with the interests of local photography clubs. These clubs often have charters that emphasize skill building and developing expertise in all aspects of photography, which is at odds with the overly restrictive rules historically put in place by these organizations.

Photo clubs should, as quickly as possible, create a set of outcome-based rules that allow the widest reasonable latitude in the use of the technology available today, and in the future, to govern their competitions.

Recommendation:

To address these challenges and provide a framework for photography clubs, I recommend:

Adopt Modified Rules

Photography clubs should adopt rules inspired by existing practices where applicable. One such rule shows the following:

All images and post processing of those images must be the work of the member entering the image. Images generated wholly by the use of AI text prompts are prohibited, however AI tools (i.e., generative fill may be used to enhance one’s own captures.

These rules distinguish between the use of AI for image enhancement and user-initiated AI-generated content, permitting AI tools for cleanup, optimization and enhancement while limiting user-initiated AI-generated content to computer generated art (synthography).

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I believe, with minor changes to wording, such a rule should be adopted.

All images, and post processing of those images, must be the work of the member entering the image. Images generated wholly or in part by user-initiated Generative AI are prohibited, however, all available tools, including AI tools (i.e., generative fill), may be used to optimize one's own captures.

This means you cannot use a user-initiated prompt generative fill to create an entire image of an elk against a mountain background, nor can you put a hat on the head of an elk in one of your photographs using user-initiated prompt generative fill. This does not mean you cannot put one of your hats on the elk's head, but you cannot use generative fill with a user-initiated prompt to get a hat from somewhere else and put it on the elk's head. It must be a hat you photographed.

But you CAN use the tools for cleanup.

Be Proactive

Photography clubs should take a proactive stance in establishing their own rules-as soon as possible rather than waiting for other organizations to “provide guidance” while restricting the reasonable use of current and future technology. This may mean a club's old paradigm of making changes only once per year may need to change to respond to the rapid evolution of technology.

Conclusion

The impact of AI on photography is undeniable, and its role in photography clubs and other competitions is a topic of growing importance. The recommendation presented provides a way for photography clubs to address AI use, providing a wide latitude for reasonable use of the technology while helping create a fair competition environment. Ultimately, the decision on whether to adopt reasonable, outcome-based rules will depend on the club's values and priorities.