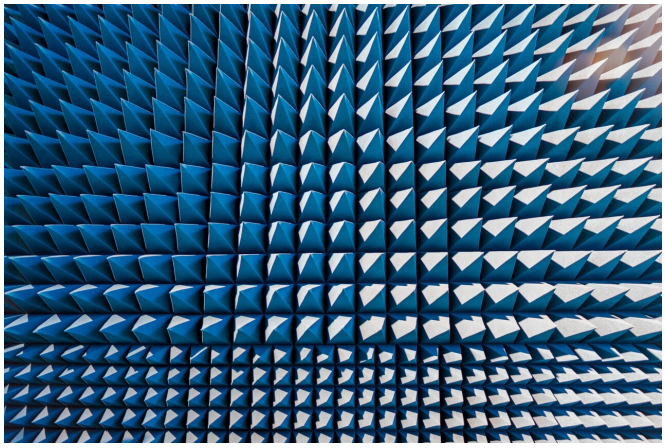
# Cleaning up noisy photos

28 January 2021, by David Bradley



Credit: Unsplash/CC0 Public Domain

Researchers writing in the *International Journal of Arts and Technology*, have proposed the use of the affine transformation to improve the performance of the edge fusion algorithms for removing noise from digital photographs, specifically in the art world.

Lei Zhao of the School of Fine Arts and Design at Mudanjiang Normal University in Mudanjiang, China, demonstrates how noise can be reduced using this transformation by about 74 percent. Smoothing is also greatly improved when compared to two well-known approaches—non-subsampled contourlet transform and hybrid particle swarm optimisation.

Noise in a photograph is a random variation of brightness or color in the image. In monochrome print photography, noise is often referred to as grain and is sometimes a desirable artifact. It may well also be desirable in some context in digital photography or the scanning of otherwise low-noise photographic prints. More commonly, however, avoiding the generation of noise in an image is preferred but not always possible. For photographic images taken under low-light conditions and the requisite high camera sensitivity values (high ISO) inherent noise is almost unavoidable. Such noise may be manifest as a lack of clarity between areas that would otherwise be of high contrast or else appear as a random, fuzzy veil of purple speckles in a color image, or gray specks in a monochrome image.

"The proposed fusion algorithm based on radiation transformation can better meet the requirements of edge fusion of art photography images," the team writes. They add that they hope to further improve the smoothness of the fusion and improve the effect of the fused art photography image still further.

**More information:** Tien Chin Wang et al. Application of fuzzy VIKOR on consumers purchasing the green home appliances, *International Journal of Green Economics* (2021). DOI: 10.1504/IJGE.2020.112578

Provided by Inderscience

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