

Signal and Image Processing Policy Clarification

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In 2012, then-Editor-in-Chief Ron Driggers introduced a shift in *Optical Engineering* (OE) away from signal and image processing papers that do not have a significant impact on optical engineering issues.¹ This guidance is even more relevant today, with the proliferation of research in artificial intelligence and machine learning. The purpose of this editorial is to elaborate on this policy and provide clarification in the context of current research trends.

There are many signal- and image-processing topics that would appear on the surface to fit within the journal's purview of Imaging Components, Systems, and Processing but lack a significant impact on optical engineering issues, making them out of scope. The canonical out-of-scope paper would be one that compares multiple competing algorithms against some new variation using a standard dataset and image-centric metrics. Examples might include an image restoration comparison with results in terms of PSNR and SSIM, or an object classification study with results in terms of accuracy, precision, and recall. In both cases, these works are a better fit for the *Journal of Electronic Imaging* (JEI). On the other hand, these topics would be appropriate for OE if the outcome is shown to allow the optical engineer to substitute smaller, lighter, or cheaper components in their camera system design, or otherwise overcome a physical limitation (e.g. atmospheric effects).

In addition to research that is better suited to JEI, authors on topics like image fusion, multi-target tracking, and encryption should generally consider the *Journal of Applied Remote Sensing* (JARS) first. OE also occasionally receives submissions on topics that would be of more interest to the readers of the *Journal of Medical Imaging* (JMI). Each SPIE journal serves a specific technical community, and, in general, we want each image- and signal-processing paper (in the broadest sense, including machine learning and artificial intelligence papers) to be read by those who will most appreciate it. To future-proof our image/signal-processing policy, our default position will be to decline articles that fall within the scope of another SPIE journal unless the authors demonstrably convey impact on optical engineering issues as defined elsewhere in OE's scope.

We are grateful for every author who wants to publish in *Optical Engineering*. You are peers and valued colleagues who we look forward to seeing at SPIE events around the world. In this spirit, contact us at oe@spie.org if you have questions about this policy or believe that we have made an error in its application.

Reference

1. R. G. Driggers, "Small shift in scope for optical engineering," *Opt. Eng.* **51**(3), 030101 (2012).

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