

NYU's Simoncelli wins Engineering Emmy for creation of method to assess video quality

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Eero Simoncelli, a professor in New York University's Center for Neural Science, has won an Engineering Emmy Award for the creation of a now widely used algorithm that assesses how viewers perceive the quality of an image or video, the Television Academy announced this week.

Simoncelli shares the honor with his colleagues Zhou Wang, a professor at the University of Waterloo, Alan Bovik, a professor at the University of Texas at Austin, and Hamid Sheikh, a director at Samsung's Mobile Processor Innovation Lab. They will receive the award at a ceremony on Oct. 28 at the Loews Hollywood Hotel. Josh Brener of HBO's Emmy-nominated "Silicon Valley" will serve as the host for the event.

The team has been recognized for its creation of Structural Similarity (SSIM), a mathematical formula and computer algorithm that estimates the perceived quality of an image or [video](#).

It has long been an aim of the film and television industries to understand how viewers see the quality of the visuals appearing on both big and small screens. Earlier creations designed to make these assessments required special hardware and were prone to errors—as a result, evaluations were more cumbersome and didn't accurately report how humans actually perceived video and image quality.

SSIM, by contrast, employs neuroscience-inspired models of the human visual system to accurately predict how we see the array of images in television and movie content. Moreover, because it relies on common

processor software and computational simplicity, SSIM can offer real-time assessments, allowing production teams to immediately make changes to film or video to enhance their work.

"SSIM is now a widely used perceptual video quality measure, used to test and refine video quality throughout the global cable and satellite TV industry, and directly affects the viewing experiences of tens of millions of viewers daily," the Television Academy said in announcing the award.

Simoncelli, who holds a doctorate in electrical engineering and computer science from MIT and a bachelor's degree in physics from Harvard University, is a Howard Hughes Medical Institute investigator. Since 1996, he has been on the faculty at NYU, where he also has appointments in the Courant Institute of Mathematical Sciences and the Department of Psychology.

Provided by New York University

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