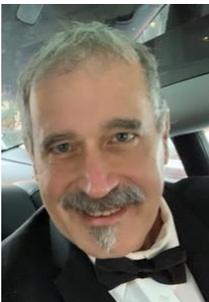


A Perceptual View of GenAI Distortions

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Abstract – Predicting the perceptual quality of pictures and videos is a hard problem that has been successfully addressed in many scenarios, such as quality control of streaming videos and sharing of social media pictures. In this talk I will review how visual quality perception can be understood using principles of neuroscience and neuro-statistical models of distortion. I will go over some basic vision science that makes accurate perceptual visual quality prediction possible, and how algorithms are designed that are now used worldwide. However, GenAI pictures are fundamentally different from optical pictures, and those differences may be statistically testable. I will an exploration into the perceptual statistics of GenAI pictures, and how picture quality models can be used to gauge GenAI visual quality and detectability.



Biosketch - Al Bovik holds the Provost's Endowed Chair at the University of Colorado Boulder, where he Directs Colorado's Laboratory for Image and Video Engineering (LIVE). His research develops new principles of visual neuroscience, bringing them to practice in workflows impacting industry at the widest scales. A member of the US National Academy of Engineering, the Indian National Academy of Engineering, the National Academy of Inventors, and Academia Europaea, his many honors include the John Fritz Medal, the IEEE Edison Medal, a Primetime Emmy Award, a Technology & Engineering Emmy Award, the RPS Progress Medal, the IEEE Fourier Award, and the Edwin H. Land Medal.