

Visual Quality in the Era of Bigger, Faster, and Deeper Videos

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Abstract – Predicting perceptual video quality is a hard problem that has been successfully addressed in many scenarios, such as quality control of streaming and sharing of videos. However, videos continue to “get bigger” along every dimension including frame rate, bit depth, color gamut, and spatial dimensionality. In this talk I will explain how perceptual video quality can be understood using principles of visual neuroscience and neuro-statistical models of distortion. I will review the basic vision science that makes accurate perceptual video quality prediction possible, how video quality prediction algorithms can be designed that are now used worldwide, and I will also discuss extensions to new and timely problems that involve the quality prediction of high/variable frame rate videos (HFR/VFR), which are of interest for future live sport streaming, and high dynamic range videos (HDR), which are becoming common in video streaming of home cinema.



Biosketch - Al Bovik is the Cockrell Family Regents Endowed Chair Professor at The University of Texas at Austin. His research interests land at the nexus of visual neuroscience and digital pictures and videos. His recent interests include immersive, virtual, and augmented visual experiences, and how they can be perceptually optimized. An elected member of the U.S. National Academy of Engineering, the Indian National Academy of Engineering, the National Academy of Inventors, and Academia Europaea, his many honors include the IEEE Edison Medal, Primetime Emmy Award, Technology & Engineering Emmy Award, RPS Progress Medal, and Edwin H. Land Medal.