

JPEG XL Next-Generation Image Coding

Abstract:

Image content often represents a substantial volume of data. In most cases, there is a statistical redundancy among samples of such data that if appropriately modelled, can reduce the size of the content. Also, as the vast majority of images are destined to be consumed by human subjects, further compression can be obtained by taking into account the properties of the human visual system. Practical considerations such as complexity, memory requirements, delay, progressiveness, backward compatibility, lossy or lossless transcoding, error resiliency, etc. often play an important role when designing and deploying useful image and video compression technologies.

In this talk, we start with an overview of the design choices that led to several past JPEG image compression standards with emphasis on their strengths and weaknesses. We then present the most recent image compression standard called JPEG XL, along with motivations that led to its design and the added values they bring.