INTRODUCTION

MULTIMEDIA signals have become a part of our daily lives, thanks to the availability of low cost devices coupled with the rapid growth of traditional and advanced multimedia broadcast services. In particular, fixed/mobile advanced media delivery fueled by the emergence of IPTV, cloud services and over-the-top (OTT) media services has enabled the

consumers to enjoy more immersive viewing experience of 3DTV, HDR, 4K etc., from the comfort of their premises. As a result, our interaction with multimedia has not only increased quantitatively but the quality of such interaction has also evolved. In particular, todays end users are more demanding in terms of their multimedia experience, and perceptual quality is one of the intrinsic factors that affects such interaction. Thus, assessment of perceptual quality is an important aspect in todays multimedia communication systems. To that end, subjective assessment performed by human subjects is still considered the most accurate methodology and remains the most reliable and accurate method, given appropriate laboratory conditions and a sufficiently large subject panel. However, subjective assessment may not be feasiblein certain situations (e.g., real-time multimedia transmission), and an objective approach is more suitable in such scenarios. Objective assessment of multimedia quality involves the use of computational models which are expected to predict quality scores in a repeatable fashion and such that the objective predictions align well with the subjective opinion of perceptualsignal quality. It is however important to stress that objective approaches may not exactly mimic the subjective opinionin all situations, and are not meant to entirely replace subjective assessment. Instead they can provide approximate and relative estimates of perceptual quality, within the context of the applications such as DTT broadcast, IPTV, multimedia compression etc. While there has been substantial research effort towards developing objective quality estimators for multimedia signals (including single or multi modal signals such as image, video, speech, audiovisual, graphics etc.), issues related to how closely the human opinion can be mimicked and those related to computational efficiency (these have obvious consequences on practical deployment) exist. In that context, a data driven approach has also been viewed as a plausible solution. Even though interest in such methods has existed for several years, there have been renewed and concerted efforts to exploit such data driven methods for the said purpose.