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Title: AI-SQ Metrics: Artificial Intelligence in Sound Quality Metrics

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Abstract:

Good sound quality can indicate many positive aspects of a product such as robustness, power, overall quality and may even be critical for the customer's decision to buy it or not. Sound quality can also affect the health and well-being of people in a given environment. It is therefore of the utmost importance that the definition of good sound quality is as precise as possible in a particular context. In this aspect, the combination of acoustic/psychoacoustic parameters is typically used together in a linear combination to generate a metric based on listening test results. However, this linear approach can disregard many complex nonlinear parameter iterations that could be helpful to better describe human perception. To solve this problem, this paper introduces a new family of metric models called AI-SQ Metrics (Artificial Intelligence in Sound Quality Metrics) that are based on machine learning methods to evaluate the sound quality of sounds with spectro-temporal patterns. The proposed metric is evaluated against the standard linear regression, and the properties of the new approach for sound quality metrics are discussed.

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