Scalable End-to-end Quality Control in Approximate Computing

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User-centric Application

Image compression

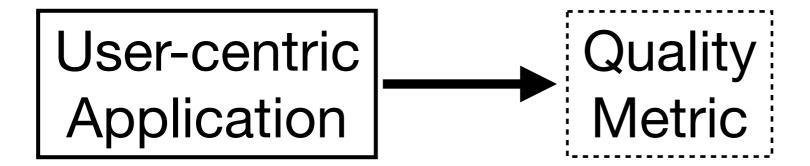


Image compression

Average Pixel Error Rate



Image compression

Average Pixel Error Rate

User Satisfaction



Image compression

Average Pixel Error Rate

User Satisfaction

User-centric Application

Human Perception

Image compression

Quality
Score
(QScore)

[Wang et al., 2004] [Seshadrinathan et al., 2010]

User-centric Application

Quality
Assessment
Model

Human Perception

Image compression

QScore = f(image)

Quality
Score
(QScore)

[Wang et al., 2004] [Seshadrinathan et al., 2010]

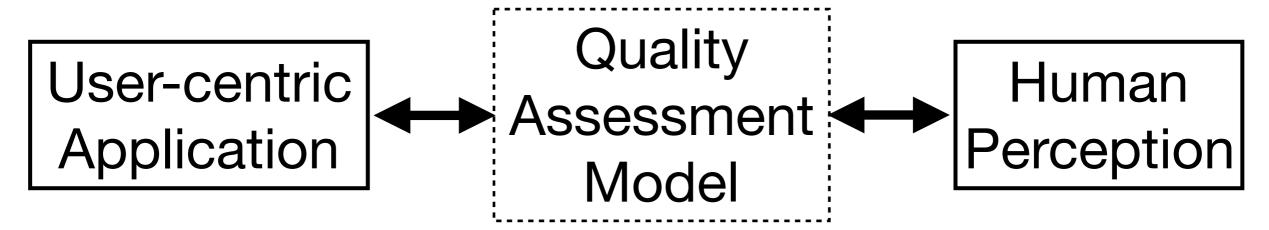


Image compression

QScore = f(image)

Quality
Score
(QScore)

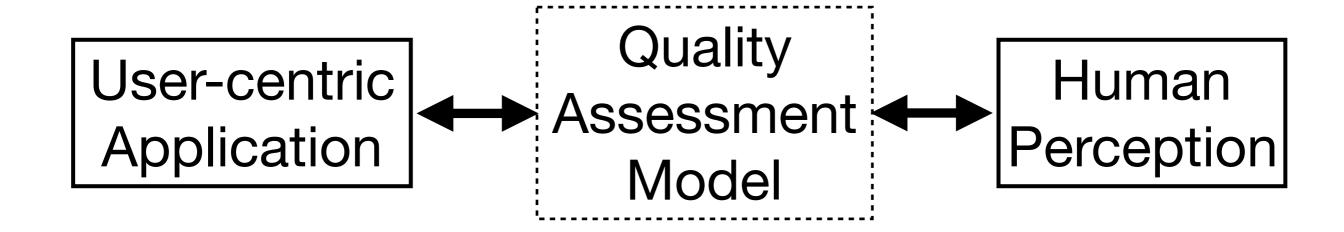


Image Model Image QScore

Audio Audio Model Audio QScore

Video Wodel Video QScore

Text Model Text QScore