

# End-to-end Quality Control in Approximate Computing

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# User-centric Application

Image  
compression

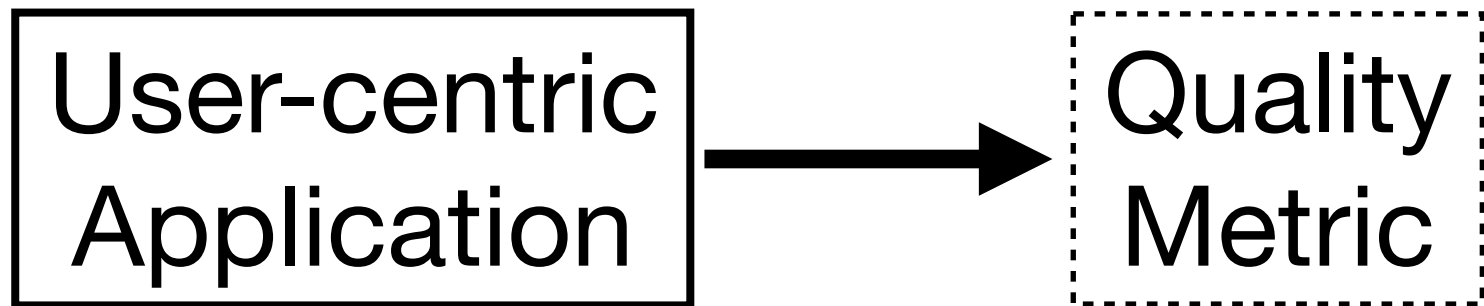


Image  
compression

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

User  
Satisfaction

User-centric  
Application



Human  
Perception

Image  
compression

Quality  
Score  
(QScore)

User-centric  
Application

Image  
compression

Human  
Contextural  
Model

Human  
Perception

Quality  
Score  
(QScore)



User-centric  
Application

Image  
compression

Human  
Contextural  
Model

QScore =  
 $f(\text{image}, \text{knobs})$

Human  
Perception

Quality  
Score  
(QScore)

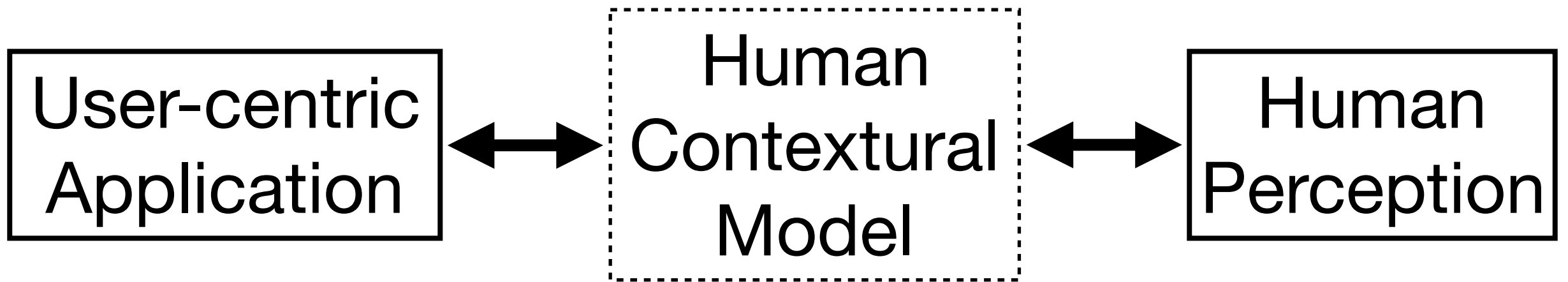
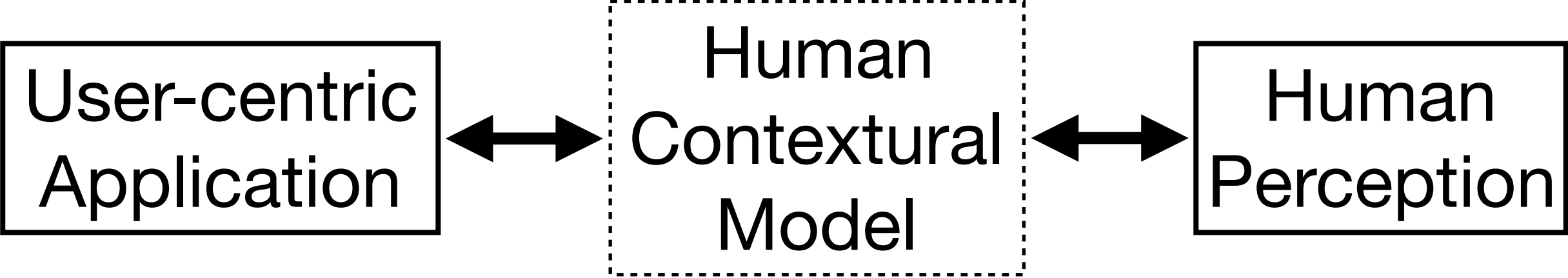


Image  
compression

QScore =  
 $f(\text{image}, \text{knobs})$

Quality  
Score  
(QScore)

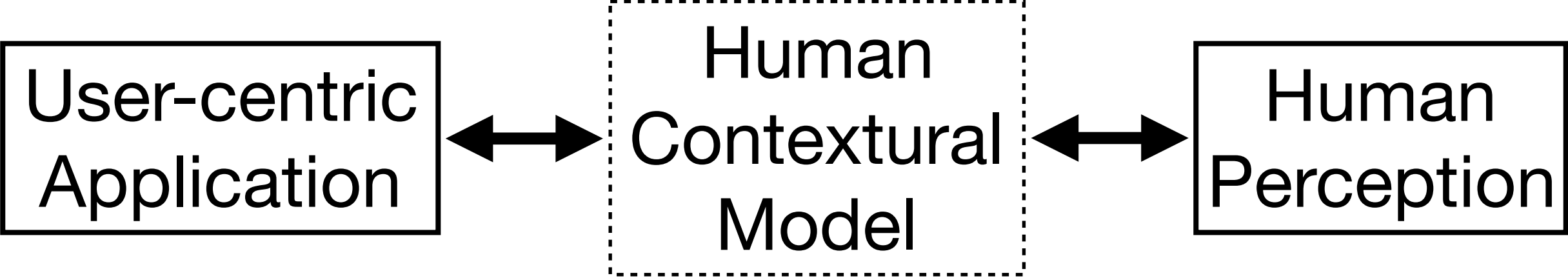


Image

Audio

Video

Text



Image

Image Model

Image QScore

Audio

Audio Model

Audio QScore

Video

Video Model

Video QScore

Text

Text Model

Text QScore