Video Compression through Image Interpolation

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Traditional codec

Motivation & overview

Motion-compensated interpolation

Vanilla interpolation

can’t disambiguate multiple possibilities

Deep network

U-Net 
interpolate 
U-Net

U-Net 
interpolate 
U-Net

Motion-compensated interpolation

greatly disambiguate interpolations

can’t handle missing info e.g. deformation/occlusions

Hierarchical interpolation

Residual motion-compensated interpolation

No missing info: pure interpolation

Context not useful: image compression

In practice: a bit of both (adaptively select bitrates)

Experiments

Entropy coding

Bitrate optimization

Comparison to prior work