

Wyner-Ziv Coding of Still Images with Rate Estimation at the Encoder

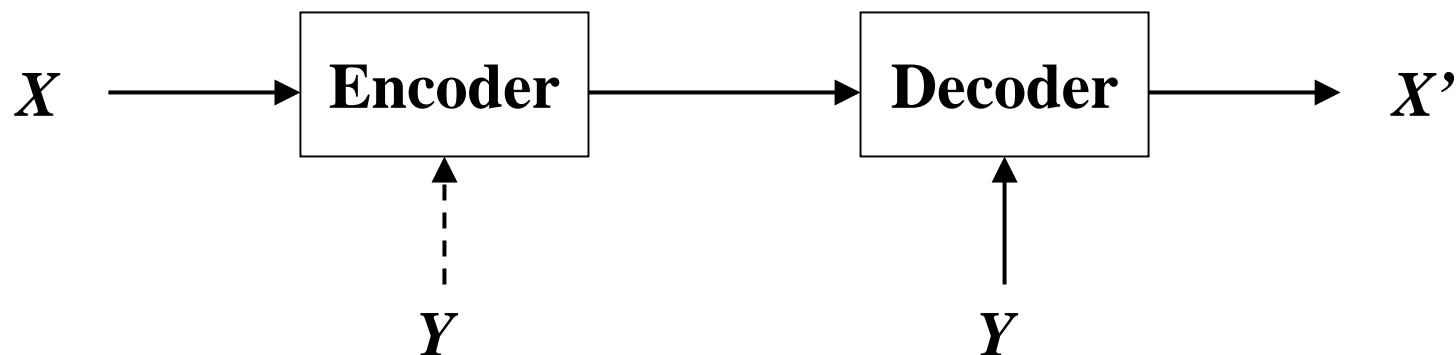
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Outline

- Information Theory Background
- Practical Wyner-Ziv Video Coding Review
- Wyner-Ziv Coding for Still Images
- Simplified Rate Estimation

Information Theory Background

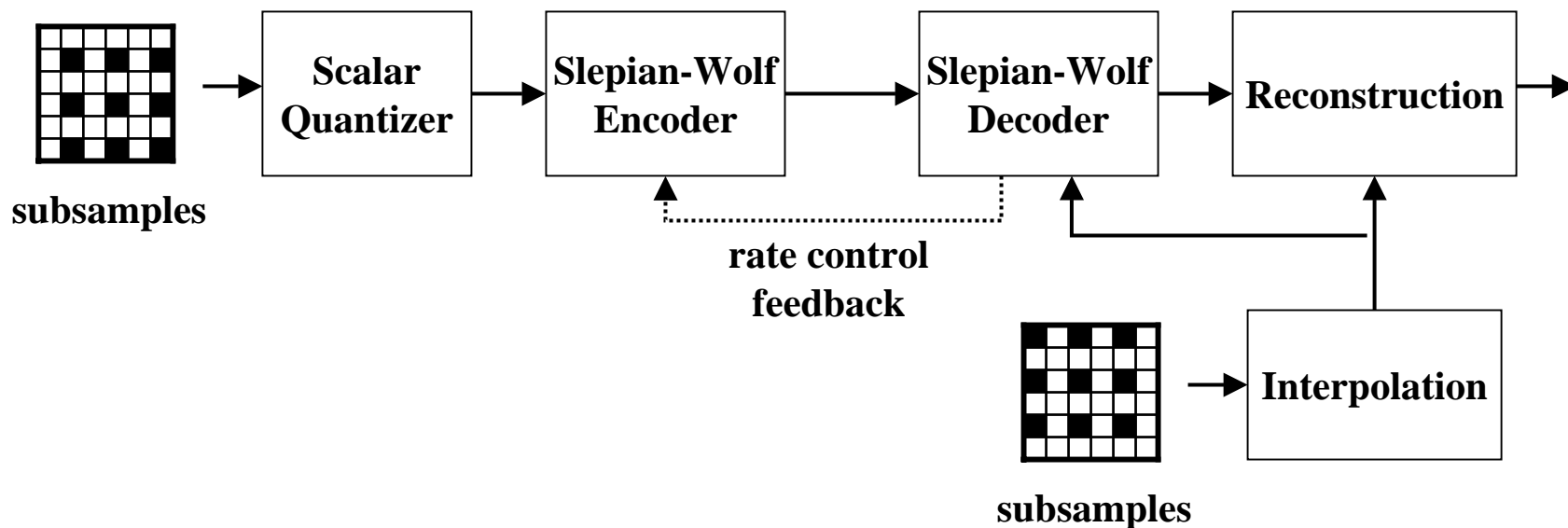


- $R_{X|Y}(D)$ suffers only slightly when Y is not known to the encoder. [Wyner, Ziv, 1976]
- Simplified encoder architectures can nevertheless be efficient.

Practical WZ Video Coding

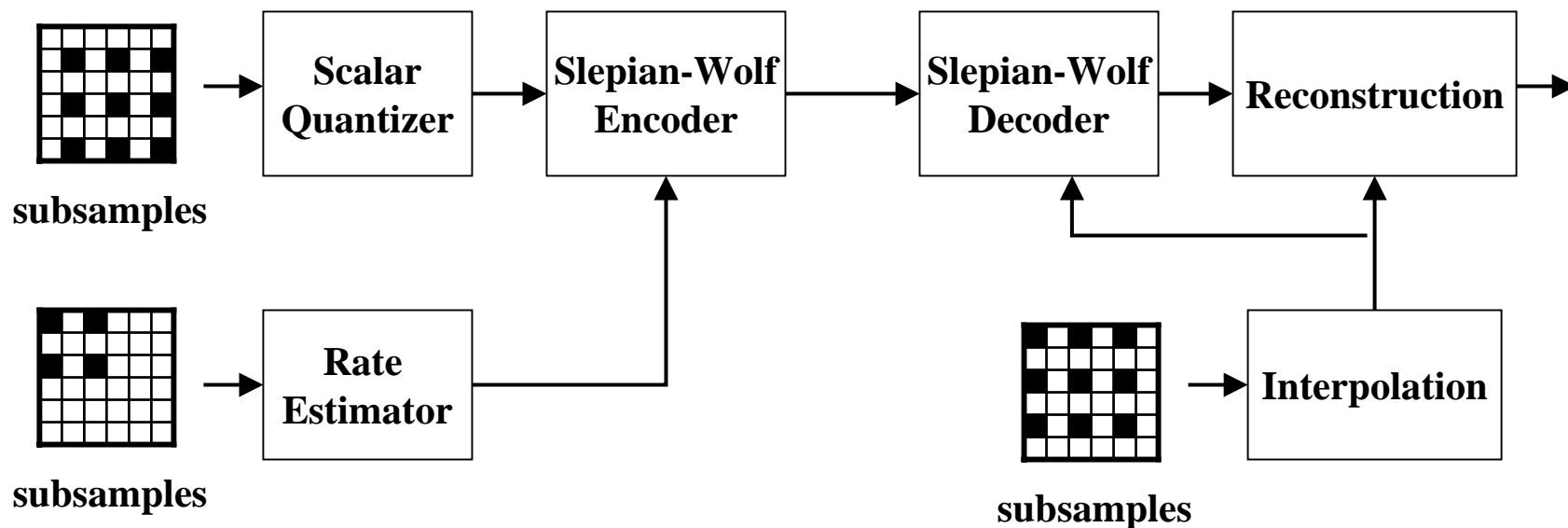
- Modern distributed applications
- Proposed architectures
 - RCPT codec [Aaron, Zhang, Girod, 2002]
 - PRISM [Puri, Ramchandran, 2002]
- Open questions
 - Spatial WZ coding for still image frames
 - Rate estimation at the encoder

WZ Coding for Still Images



To be implemented according to RCPT
architecture [Aaron, Zhang, Girod, 2002]

Simplified Rate Estimation



To estimate the accuracy of decoder interpolation, and hence the required rate.

Proposal Summary

- Investigation of interpolation strategies and characterization of interpolation residuals.
- Construction and evaluation of Wyner-Ziv codec for still images.
- Investigation and evaluation of rate estimation strategies.