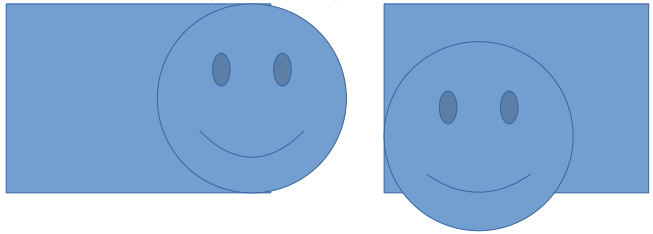
Concepts

- Block-wise mode decision (from H.264 and H.265)
  - (This two modes are my own idea)
  - Mode 1: Default Residual coding
    - Residual = P – mcp; Fn = Rec_Residual + mcp;
  - Mode 2: Residual coding with quantized mcp
    - Residual = P – quantized_mcp; Fn = Rec_Residual + quantized_mcp;
- Reason:
  - dct_block⇆(quantization)⇆ block ⇆ motion predict
    - Interpret 1: generate high frequency noise.
    - Interpret 2: pseudo randomness on Quantization matrix (Detail accumulation for still part of vedeo)

More noise more detail

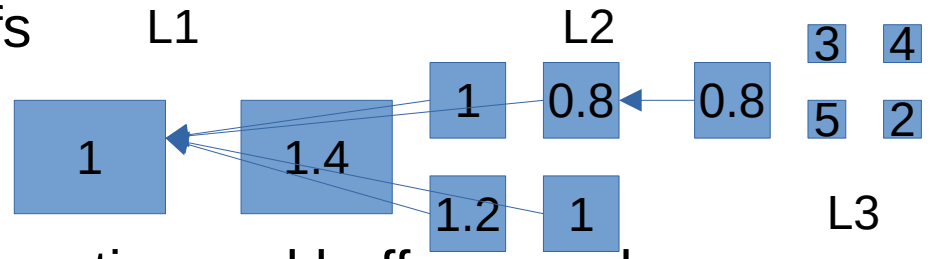
Less noise less detail



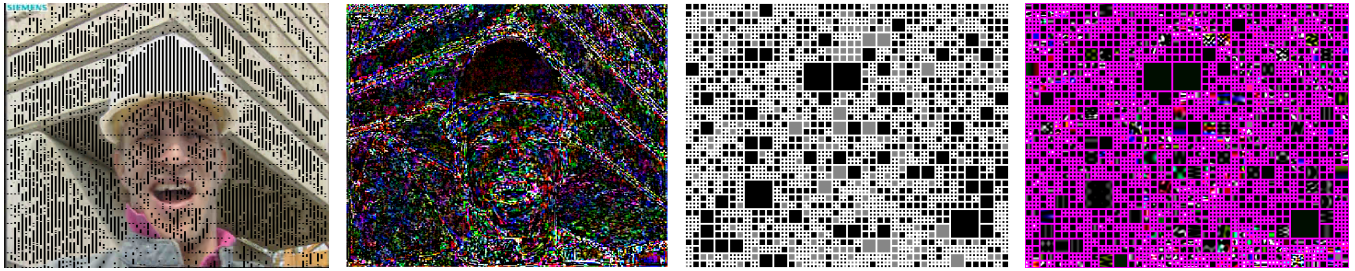
Same image, different position in block
similar to
Same image, same position, different quantization matrix

Implementation

- 4 level tree structure for Transform Unit
- Use recursive function to encode and decode the tree structure together with mode code and residual code
- Dynamic programming to find the best tree structure and modes given code table from the tree leafs
  - MSE+λ bpp
  -
- Iteratively optimize for cost function and haffman code
  - Haffman code ⇆ D + λR



Deblock filter



Performance