Introduction

• Early work towards improving screencasting
• Implemented in Daala, but easily applicable to other codecs
Screencasting Properties

- Anti-aliased text on flat background
- Many horizontal lines and edges
- Reduced number of colours
- Simple “window” displacements
  ...
- What else? Suggestions welcome
Haar Wavelet

- Simplest orthogonal wavelet
  - Good on synthetic content, bad on natural images

\[ y = \sqrt{\frac{1}{2}} \begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix} x \]
L1-Tree Wavelet Encoding

- Based on the sum of absolute values in trees
- Encode distribution between parent and children
These coeffs were LS-optimized on subset 1

```c
if (has Ur) {
    sb_dc_pred = (22*sb_dc_mem[by*nhsb + bx - 1] - 9*sb_dc_mem[(by - 1)*nhsb + bx - 1] + 15*sb_dc_mem[(by - 1)*nhsb + bx] + 4*sb_dc_mem[(by - 1)*nhsb + bx + 1] + 16
} else {
    sb_dc_pred = (23*sb_dc_mem[by*nhsb + bx - 1] - 10*sb_dc_mem[(by - 1)*nhsb + bx - 1] + 19*sb_dc_mem[(by - 1)*nhsb + bx] + 16)
}
```
Results (Lapped DCT)

```c
/* These coeffs were LS-optimized on subset 1 */
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    )
}
Objective Evaluation

• Added *screenshots* set to Are We Compressed Yet? Website

• PSNR, PSNR-HVS, SSIM, FAST-SSIM results
  - Not clear which metrics (if any) are correct
  - So far, PSNR-HVS appeared to be the least wrong
Questions?