

CS 331
Computer Vision

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Today's Topics

- Questions? / Comments?
- More OpenCV and Numpy
 - YCbCr color conversion to/from RGB
 - Implement this

YCbCr to/from RGB

- The Y is the intensity (same formula that we used to convert RGB to grayscale)
- The Cb and Cr channels hold the color information.

$$Y = 0.299 * R + 0.587 * G + 0.114 * B$$

$$Cb = 128 + 0.5 * B + -0.331264 * G + -0.168736 * R$$

$$Cr = 128 + -0.081312 * B + -0.418688 * G + 0.5 * R$$

$$R = Y + 1.402 * (Cr - 128)$$

$$G = Y - 0.344136 * (Cb - 128) + -0.714136 * (Cr - 128)$$

$$B = Y + 1.772 * (Cb - 128)$$

Some numpy used today

- `transpose()` method on an array
- `np.stack`
 - Stacks arrays creating a different shape of them all combined
- `np.empty`
 - Takes in shape
 - and element type