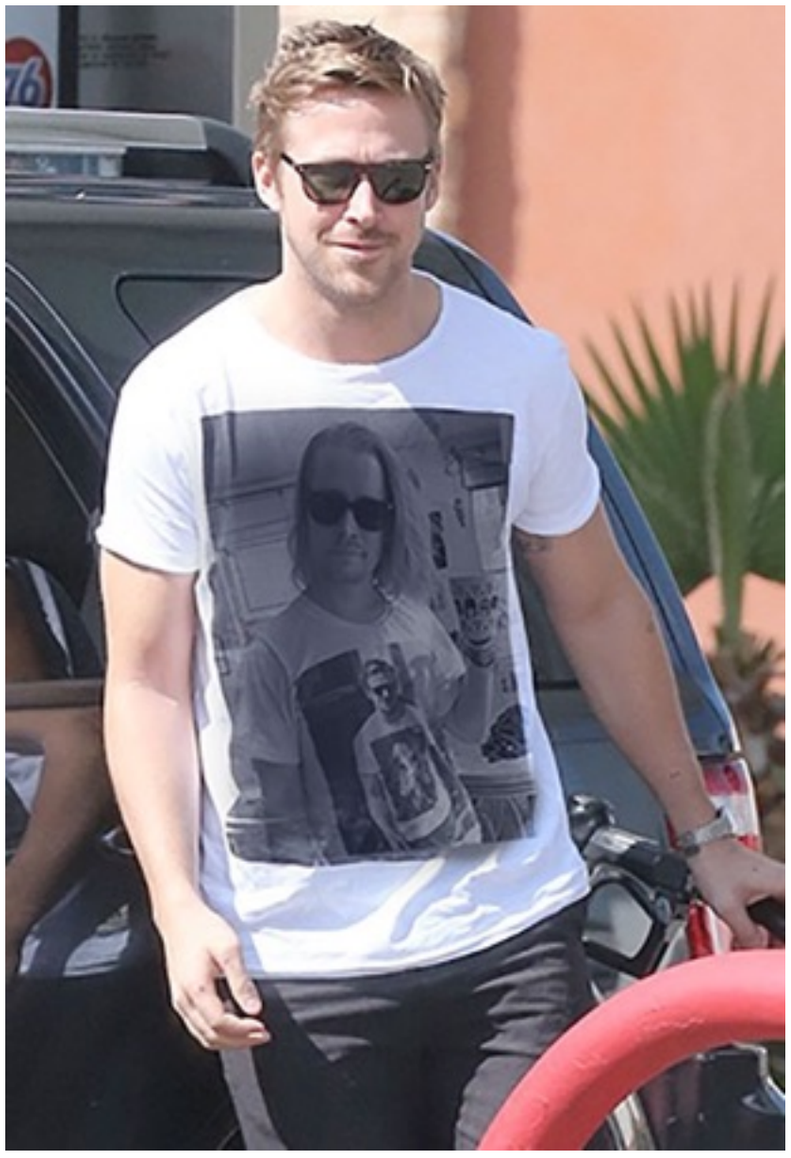
experimenting with color segmentation (on HSV and BGR Images) using k-means clustering

Full color block segmentation

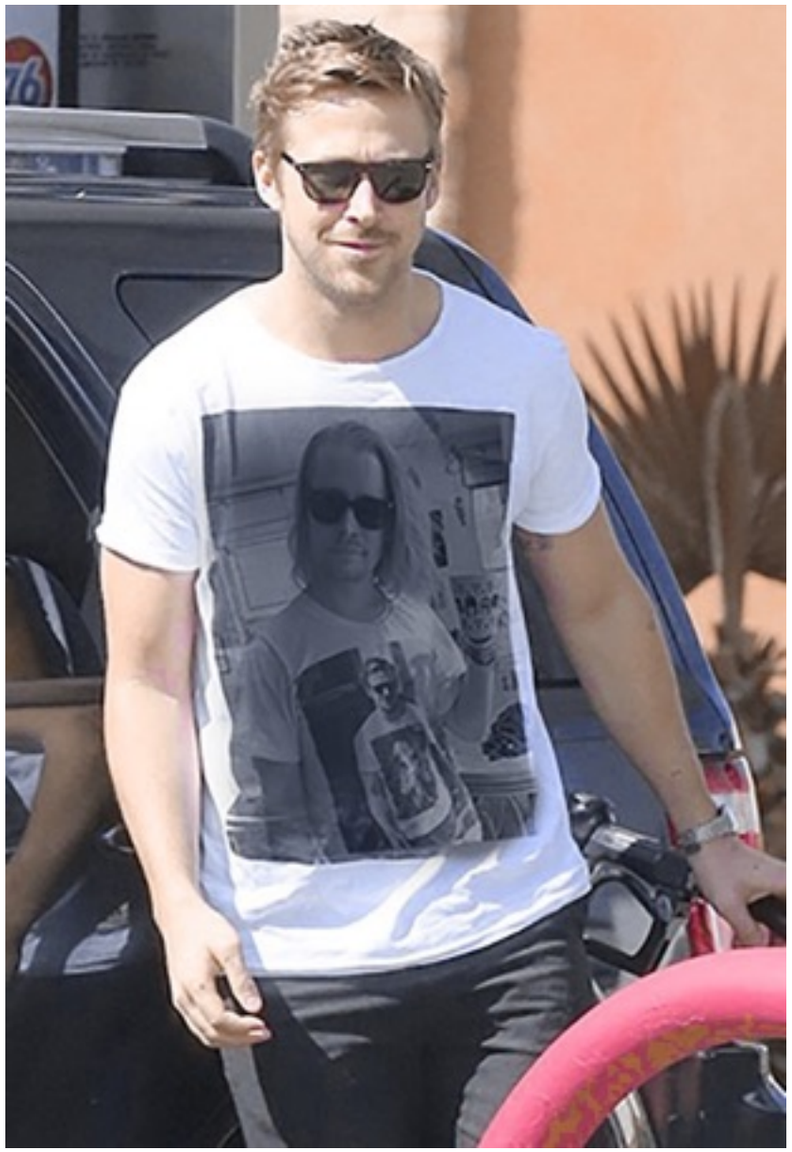


Original

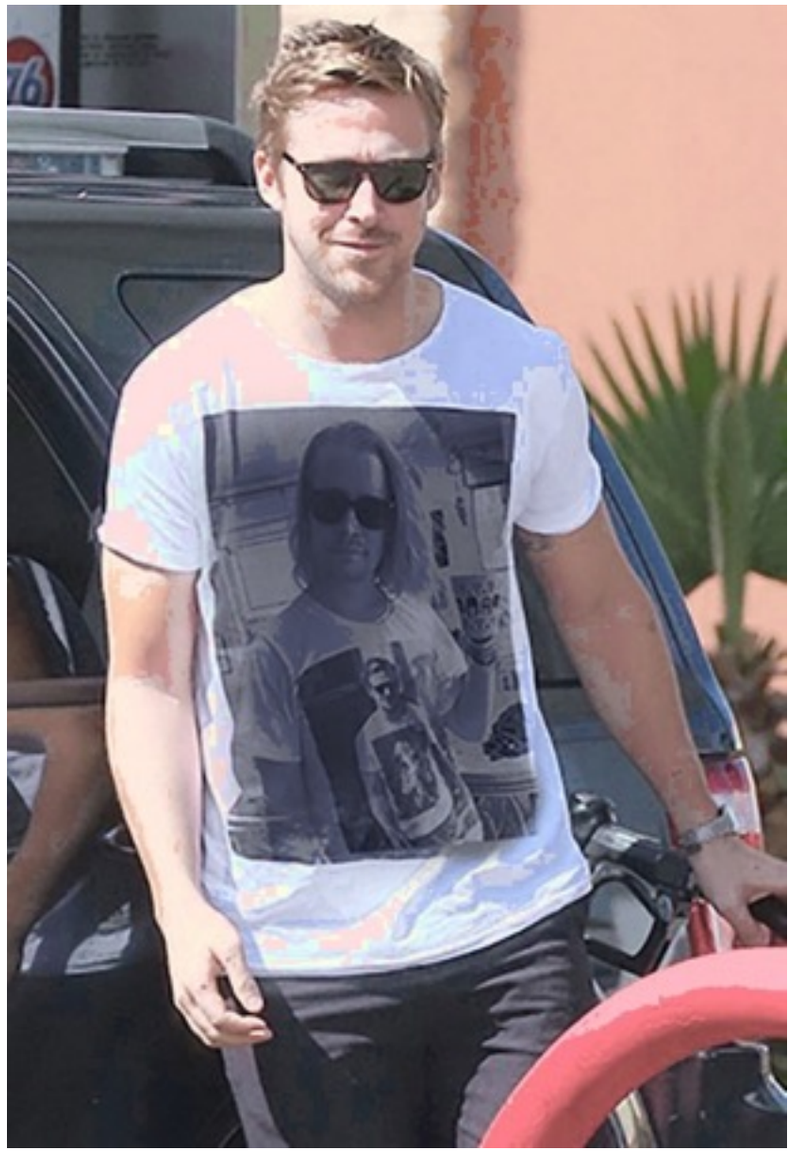
BGR (k=3)

HSV (k=4):

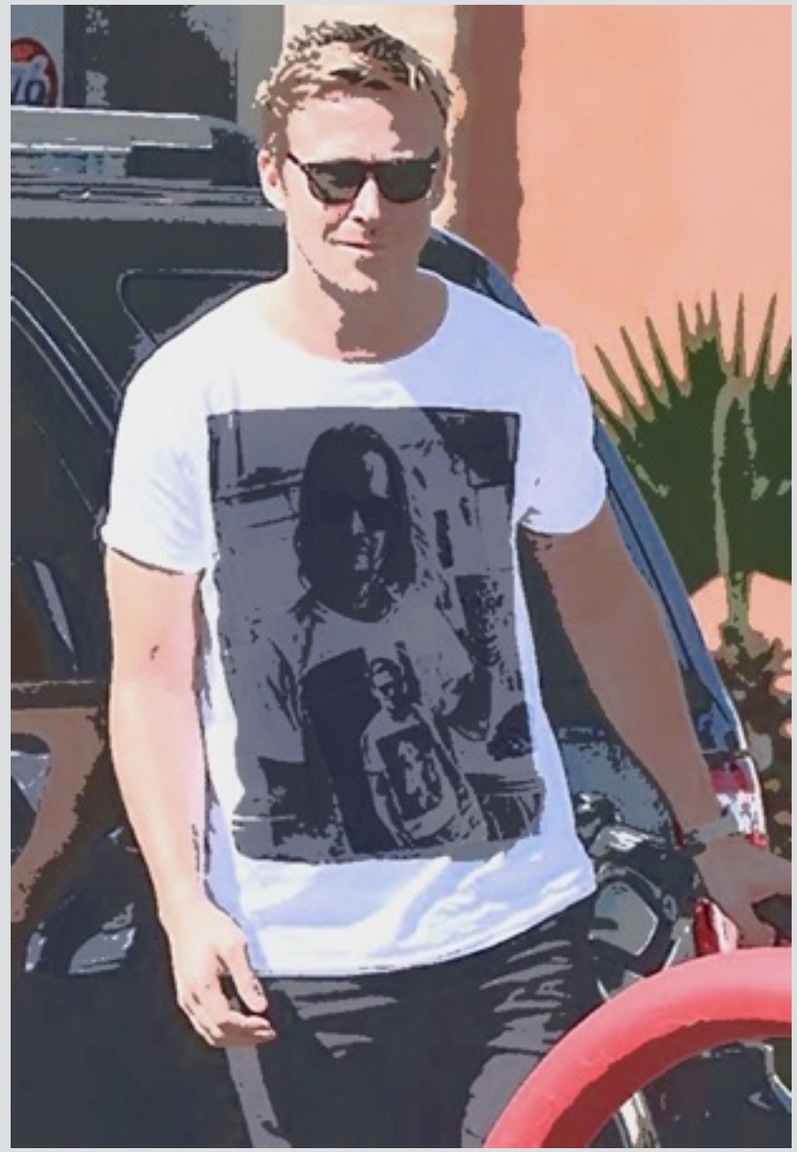
HSV: Single Channel Segmentation



Hue

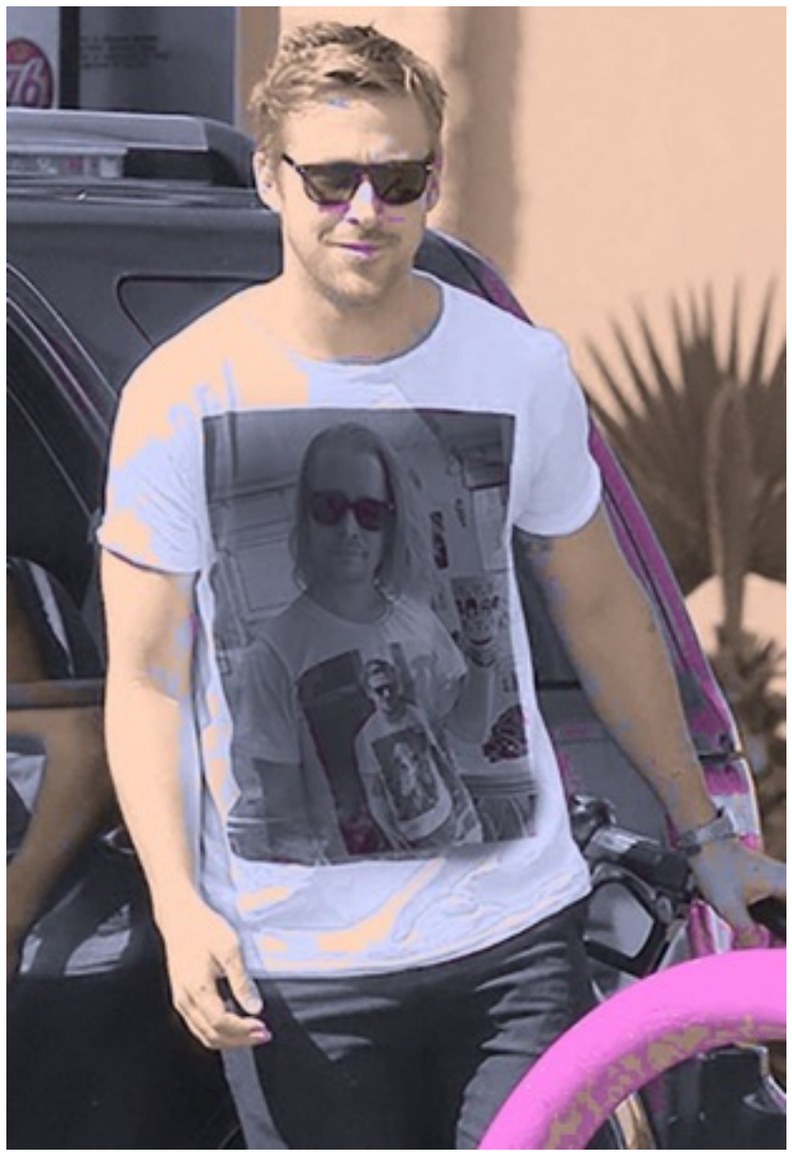


Saturation



Value:
Segmenting by value seems to give the best posterizing effect, because it is able to detect the shadows

HSV: Double Channel Segmentation



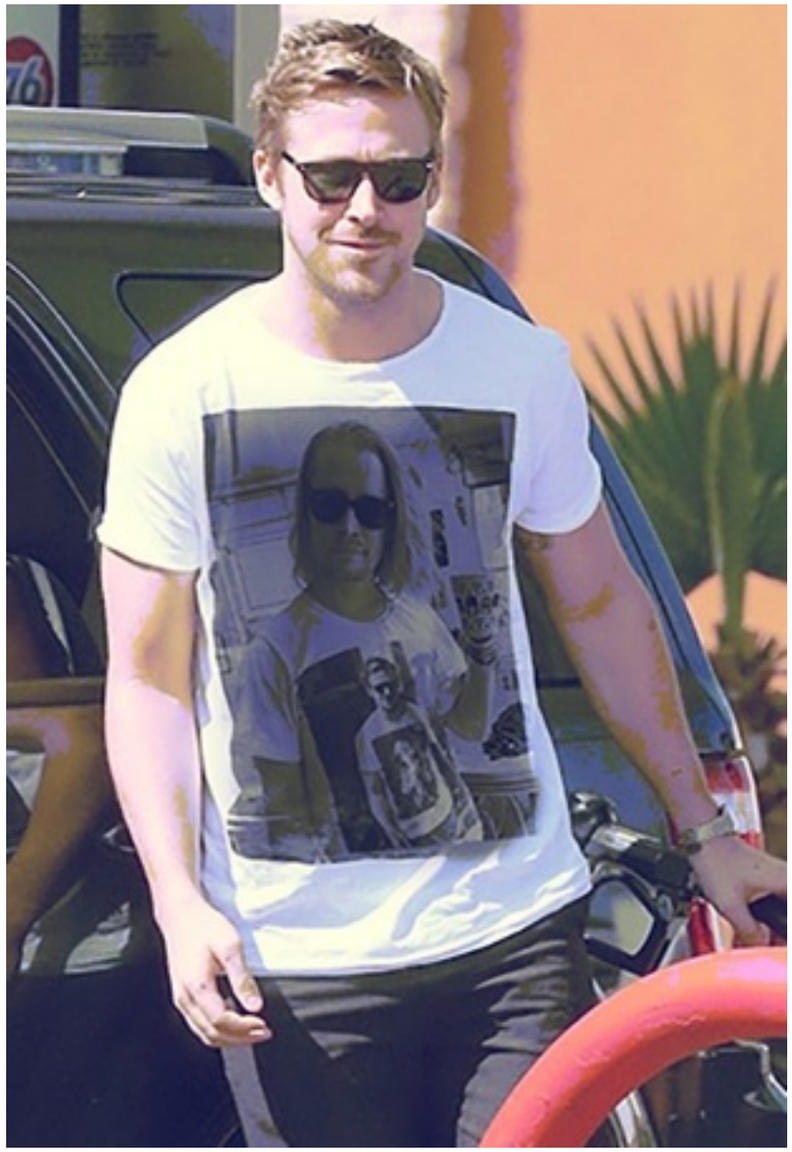
Hue+Saturation

Saturation + Value

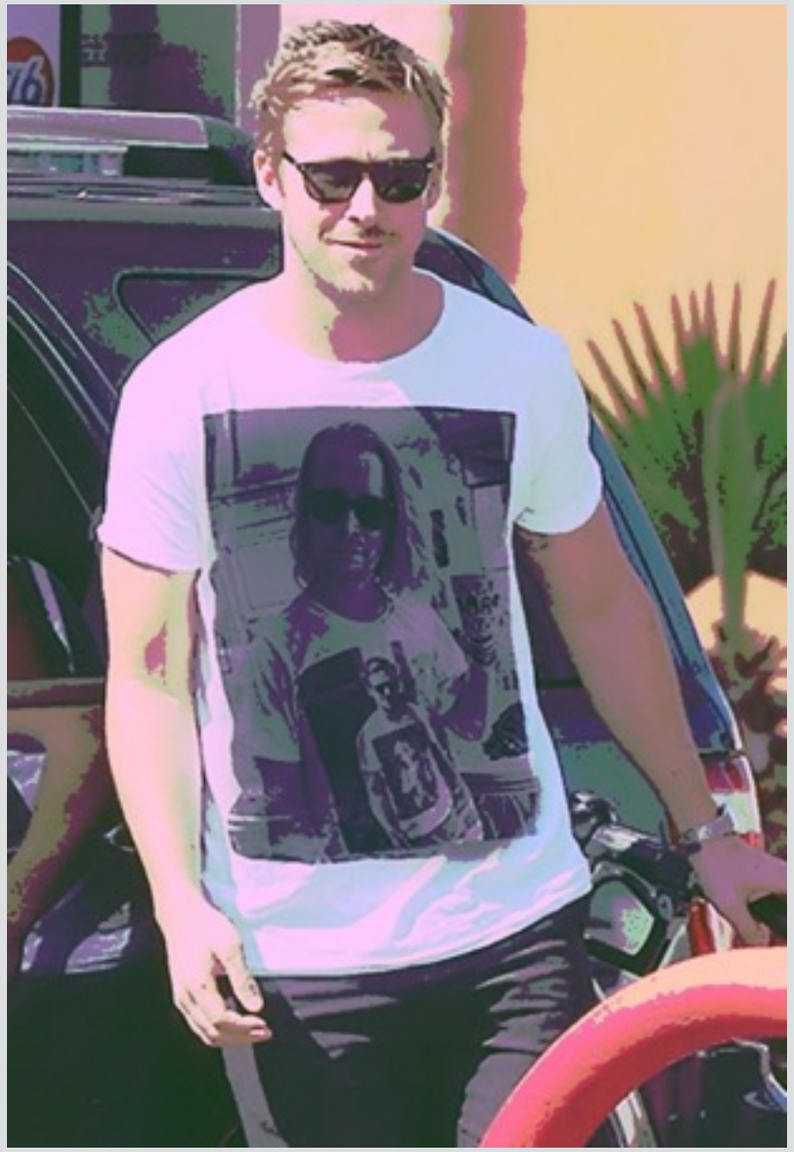
Hue + Value

The double channel segmentations involving Value have a better posterizing effect. The difference between hue and saturation is a stylistic choice. Saturation gets the shadows, while hue gets some nice colors in.

BGR: Single Channel Segmentation

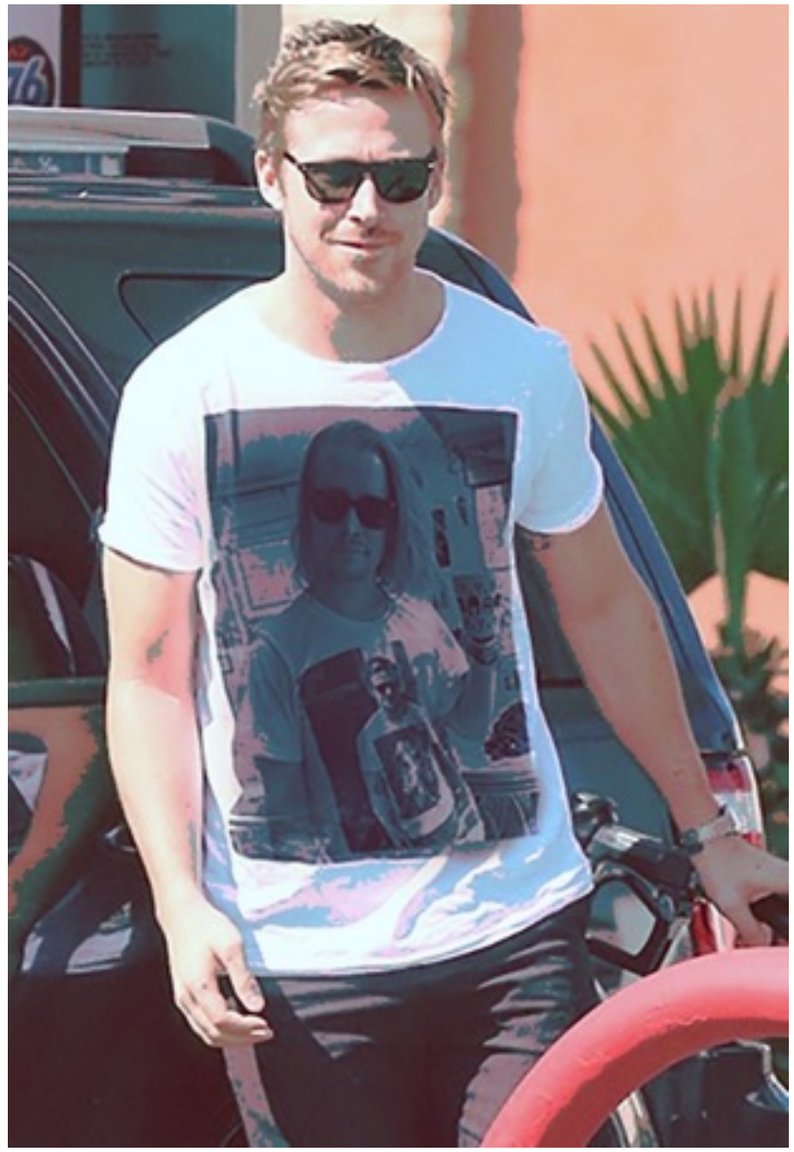


Blue



Green:

Since the image has the least amount of variation in greens, segmenting on greens brings out the liveliest reds and blues



Red

BGR: Double Channel Segmentation

Blue+Green

Green+Red

Blue+Red

The double channel segmentations involving Green have a better posterizing effect, because Green is the least varying color in the image. The difference between using Blue and Red is a stylistic choice.

BGR: Double Channel Segmentation with a modification that strengthens the posterization, creating interesting color effects

Blue+Green

Green+Red

Blue+Red

HSV: Double Channel Segmentation with a modification that strengthens the posterization, creating interesting color effects

Saturation + Value

Hue + Value

interesting …

Full color block segmentation

Original

HSV (k=4):

BGR (k=3)

HSV: Single Channel Segmentation

HSV: Double Channel Segmentation

The double channel segmentations involving Value have a better posterizing effect due to the intense shadows in this image

BGR: Single Channel Segmentation

The color diversity in this image leads to not much variation in our single channel segmentation.

BGR: Double Channel Segmentation

however, the double channel segmentation still produces neat effects.

BGR: Double Channel Segmentation with a modification that strengthens the posterization, creating interesting color effects

these two turned out sweet…

HSV: Double Channel Segmentation with modification

and the last two involving value too..

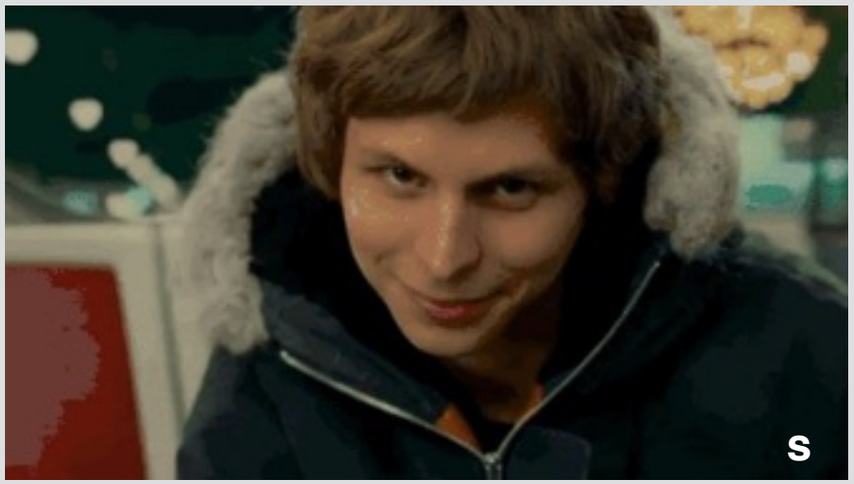
Full color block segmentation

Original

HSV (k=4):

BGR (k=3)

HSV: Single Channel Segmentation



HSV: Double Channel Segmentation

The double channel segmentations involving Value have a better posterizing effect. The difference between hue and saturation is a stylistic choice. Saturation gets the shadows, while hue gets some nice colors in.

BGR: Single Channel Segmentation

BGR: Double Channel Segmentation

BGR: Double Channel Segmentation with a modification that strengthens the posterization, creating interesting color effects

HSV: Double Channel Segmentation with modification

coolio