Neural Style Transfer

Content cost function

deeplearning.ai

Content cost function

$$J(G) = \alpha\, J_{content}(C, G) + \beta\, J_{style}(S, G)$$

- Say you use hidden layer l to compute content cost.

- Use pre-trained ConvNet. (E.g., VGG network)

- Let $a^{[l](C)}$ and $a^{[l](G)}$ be the activation of layer l on the images

- If $a^{[l](C)}$ and $a^{[l](G)}$ are similar, both images have similar content

$$J_{content}(C, G) = \frac{1}{2} \left\| a^{[l](C)} - a^{[l](G)} \right\|^2$$

[Gatys et al., 2015. A neural algorithm of artistic style]   Andrew Ng