

Style Cost *CORRECTION*

Please note that in the next video at around 8:50 when Andrew wrote down the second formula of matrix, the second factor of the multiplication should be on index k' (k prime), not k (otherwise it does not calculate any kind of covariance). This is shown in black below.

$$G_{kk'} = \sum_{i=1}^{n_H} \sum_{j=1}^{n_W} a_{jik} a_{jk'}$$

So the formula should be:

$$G_{kk'}^{[l](G)} = \sum_{i=1}^{n_H} \sum_{j=1}^{n_W} a_{ij,k}^{[l](G)} a_{ij,k'}^{[l](G)}.$$

Also at 11:08 the style cost function formula should be the squared difference:

$$(G_S - G_G)^2$$

instead of just the difference:

$$(G_S - G_G).$$

The style cost function should be:

$$J_{style}^{[l]}(S, G) = \frac{1}{(2n_H^{[l]} n_W^{[l]} n_C^{[l]})^2} \sum_k \sum_{k'} (G_{kk'}^{[l](S)} - G_{kk'}^{[l](G)})^2$$