



deeplearning.ai

# Neural Style Transfer

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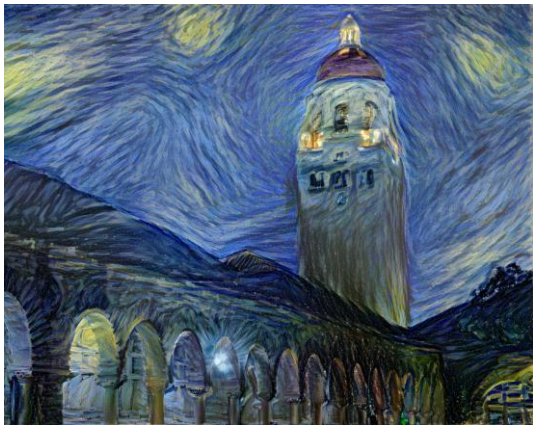
## Cost function

# Neural style transfer cost function



Content C

Style S



Generated image G

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

Find the generated image  $G$

- ## 1. Initiate $G$ randomly

G:  $\underline{100} \times \underline{100} \times \underline{3}$

$\uparrow$   
RGB

2. Use gradient descent to minimize  $J(G)$

$$G := G - \frac{d}{2G} J(G)$$

