Neural Style Transfer

Yehor Kravets

Model

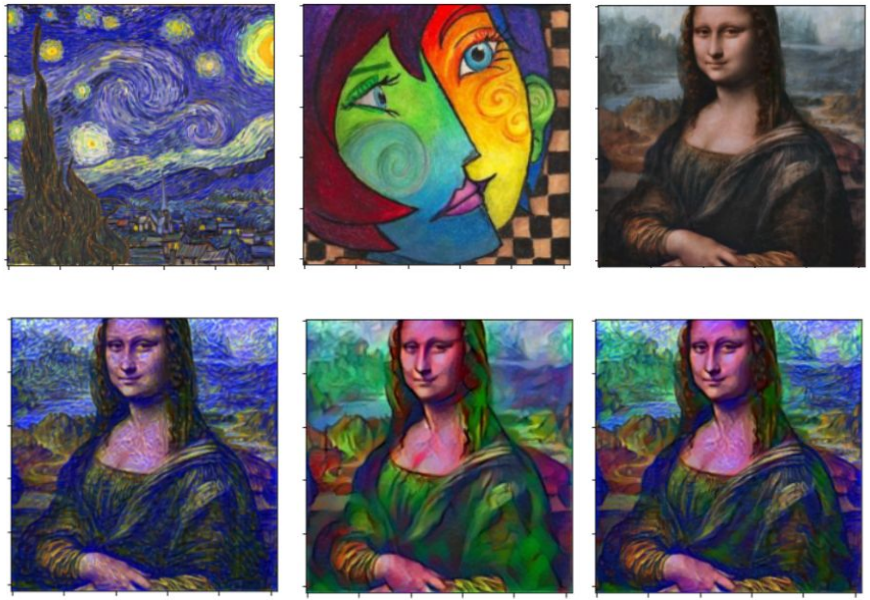
Here is the list of hyperparameters and their values in model:

- weights of content loss and style loss
- item weights of the first style loss and the second style loss
- optimizer (I have chosen optim.Adam)
- which layers to use as representation of content (layers 1-5)
- which layers to use as representation of style (layer 4)
- number of steps (200)

VGG-19 pretrained on ImageNet

$$L_{total}(p, a, x) = \alpha L_{content}(p, x) + \beta L_{style}(a, x)$$

Mona Lisa with weights of style images (1,0), (0,1), (1,1), content weight =1, style weight =100 000



(1,0) (0,1) (1,1)

Experiments with weights of content and style losses

(2,1)

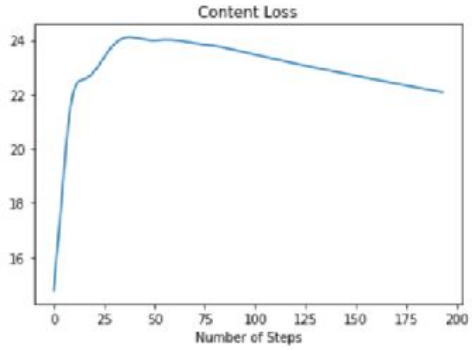
(1,2)

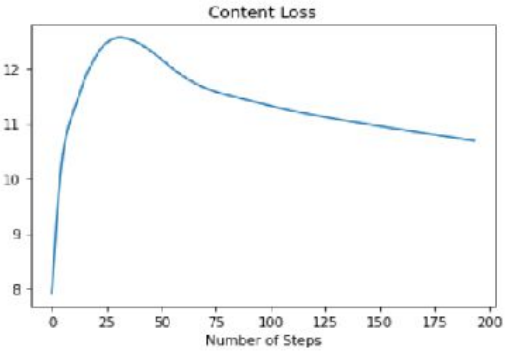
(1,1)
content loss
weight=1

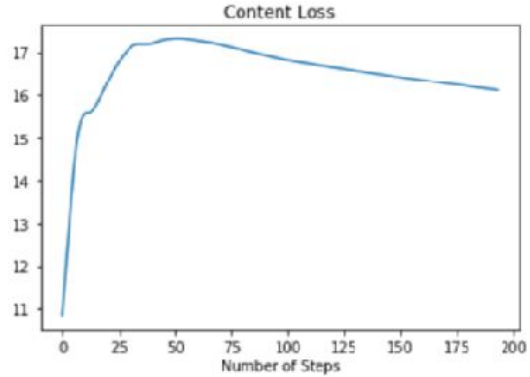
(1,1)
content loss
weight=100

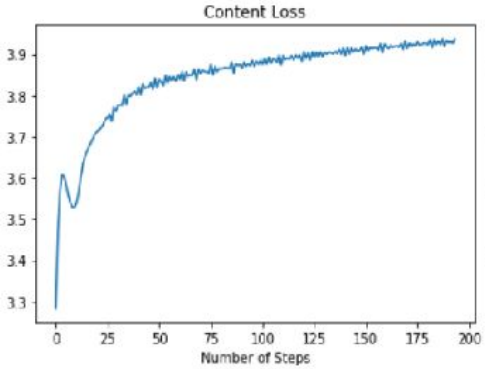
l1 vs mse in loss functions

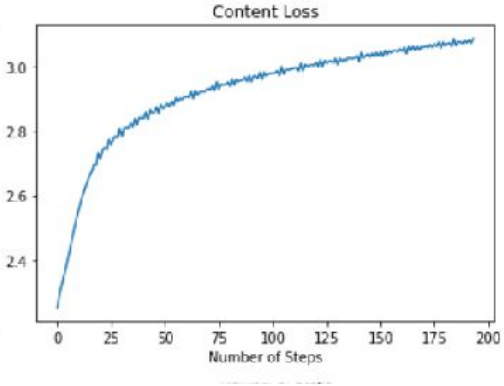
Content loss functions for model with mse and l1 functions

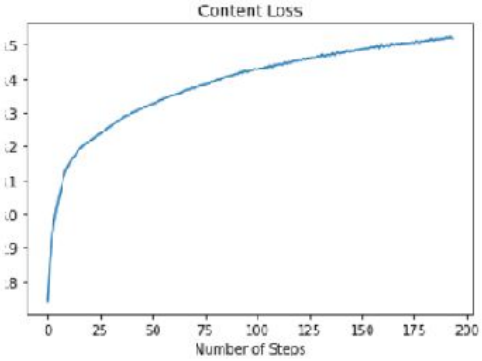


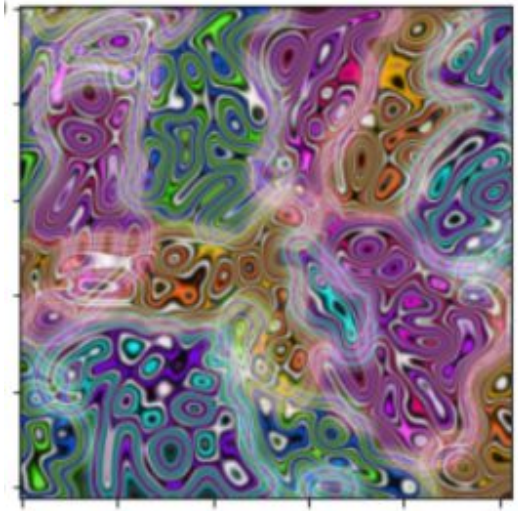


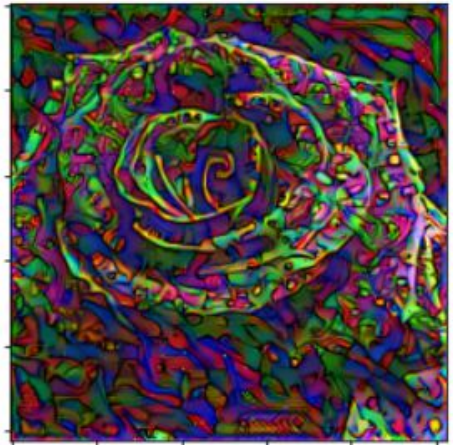












VGG vs Alexnet

VGG - 20 million parameters

Alexnet- 2.5 million parameters

Mona Lisa with Alexnet

Thank you for your attention!