

AUTOMATIC IMAGE COLOURING



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DESCRIPTION

- We are going to build a machine learning model to automatically turn grayscale images into colored images. We'll build the model from scratch using PyTorch.
- This problem is challenging because it is multimodal -- a single grayscale image may correspond to many plausible colored images.
- Deep neural networks have shown remarkable success in automatic image colorization going from grayscale to color with no additional human input
- Image colourization may in part be due to their ability to capture and use semantic information (i.e. what the image actually is) in colorization

PACKAGES AND LIBRARIES

PACKAGES:

Numpy

Pandas

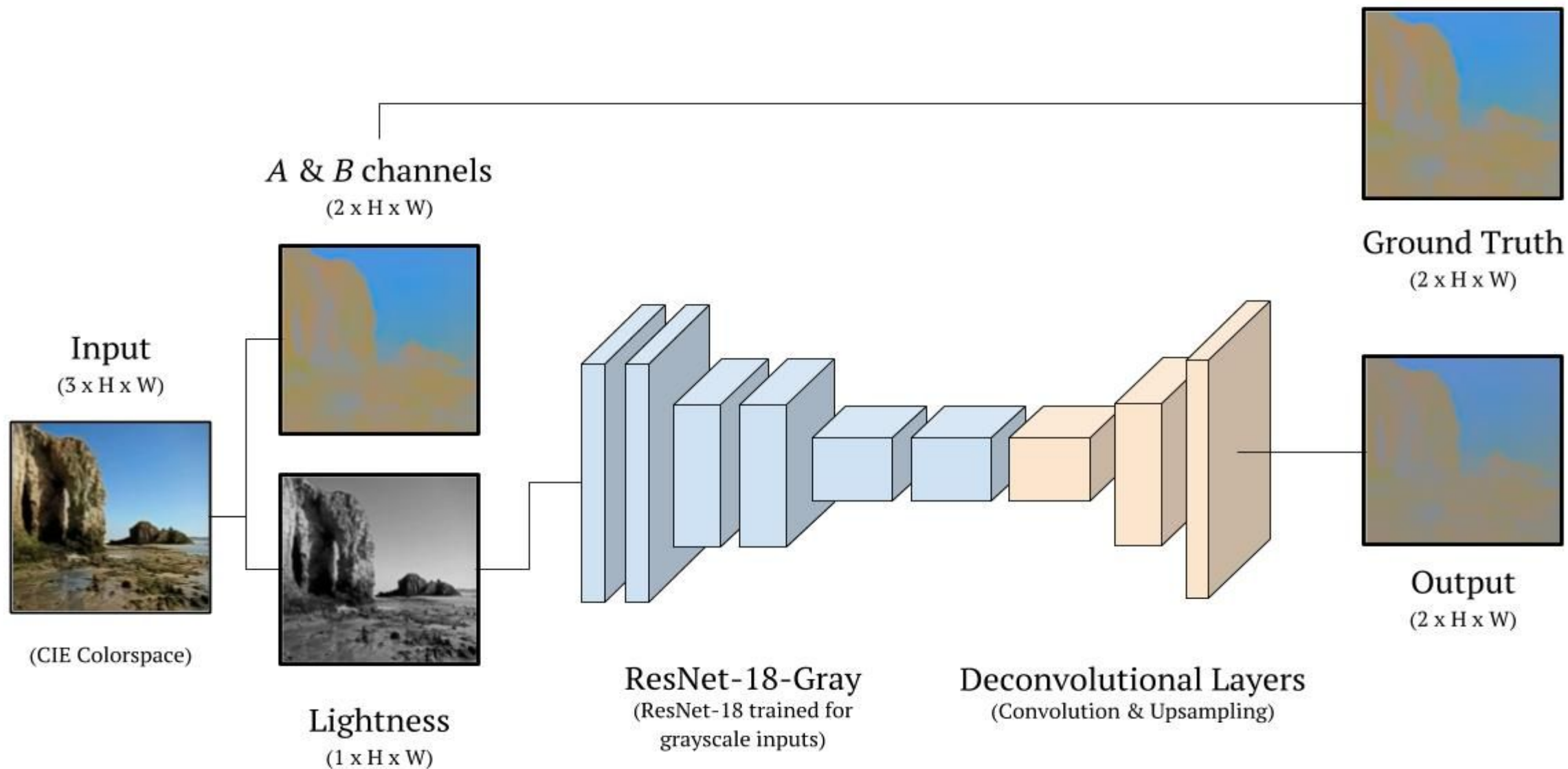
Random

LIBRARIES:

Matplotlib

PyTorch

TensorFlow



MODEL

- Our model is a convolutional neural network.
- We first apply a number of convolutional layers to extract features from our image, and then we apply deconvolutional layers to upscale (increase the spacial resolution) of our features.
- The beginning of our model will be ResNet-18, an image classification network with 18 layers and residual connections.
- We will modify the first layer of the network so that it accepts grayscale input rather than colored input, and we will cut it off after the 6th set of layers.

CONCLUSION

- We built a (simple) automatic image colorizer from scratch in PyTorch!
- This machine learning model automatically converts grayscale images to coloured images.

OUTPUT



THANK YOU

