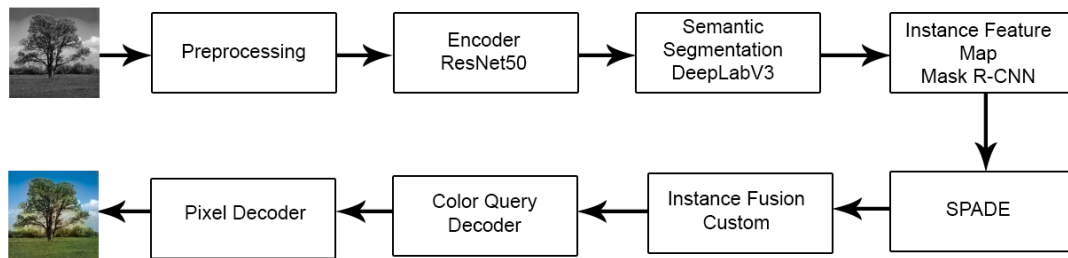
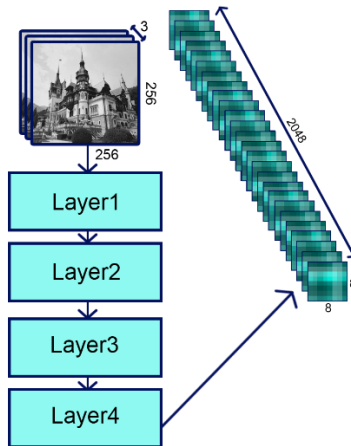


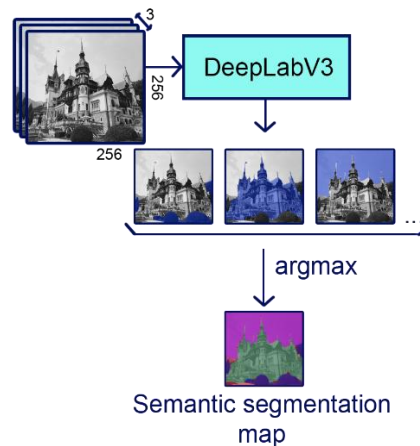
# Deep Learning Architecture for Image Colorization using semantic, instance-aware and color query guidance



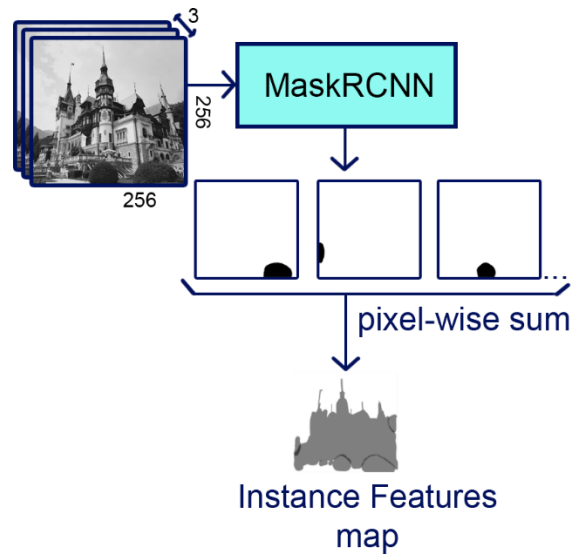
**Encoder:** ResNet-50 pre-trained, generates main feature map



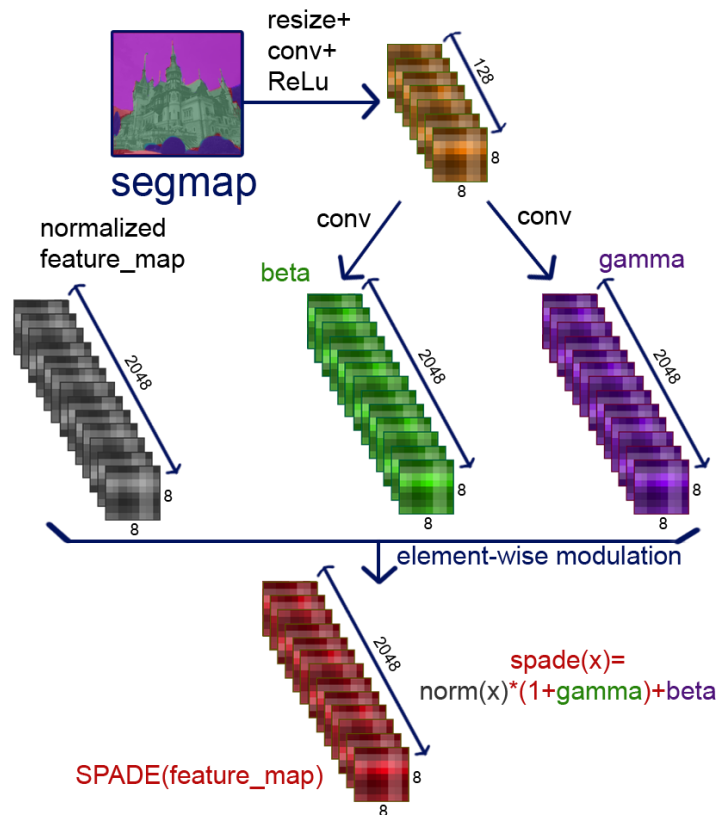
**Semantic Segmentation:** DeepLabV3 pre-trained



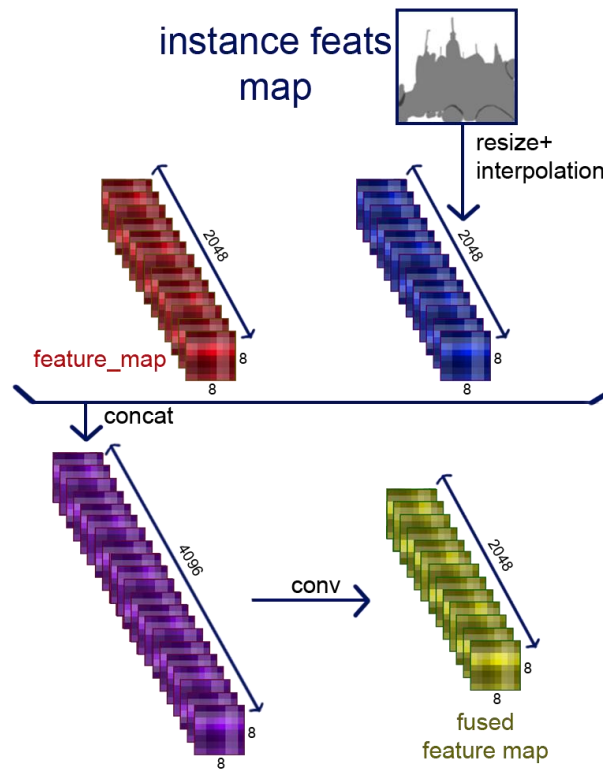
### Instance Feature Map: MaskR-CNN pre-trained



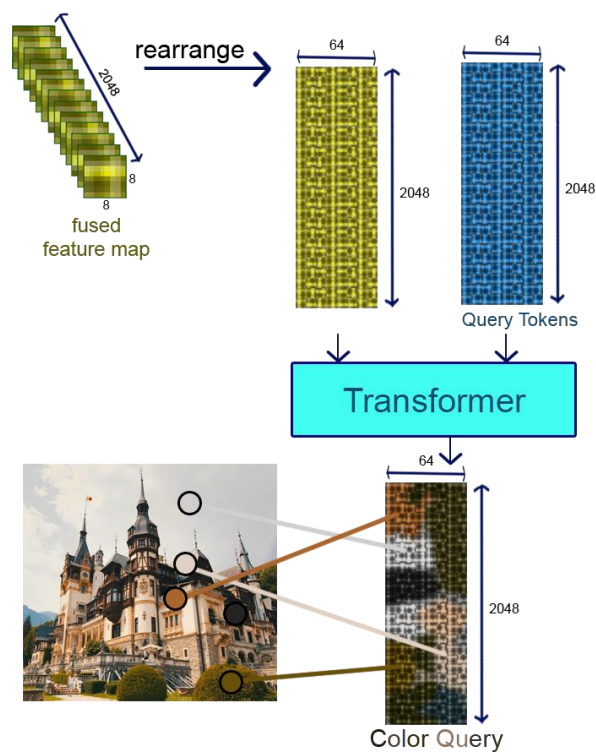
### SPADE: Normalization and fusion with Semantic Map

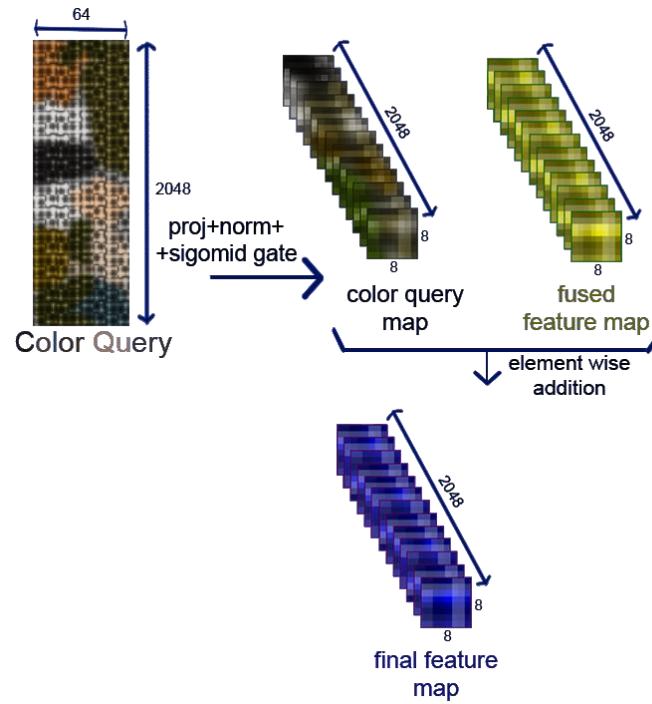


## Instance Fusion: Fusion with Instance Map

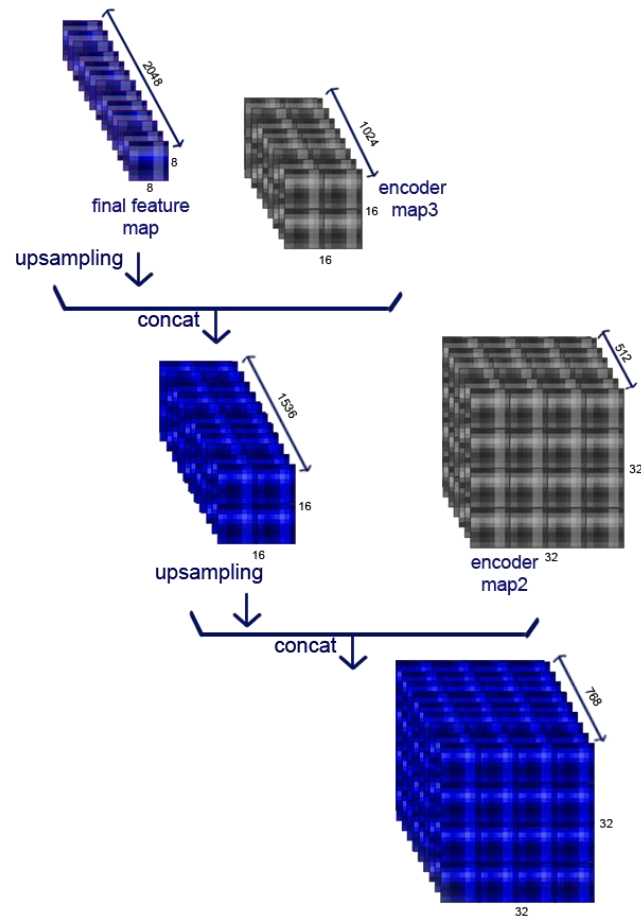


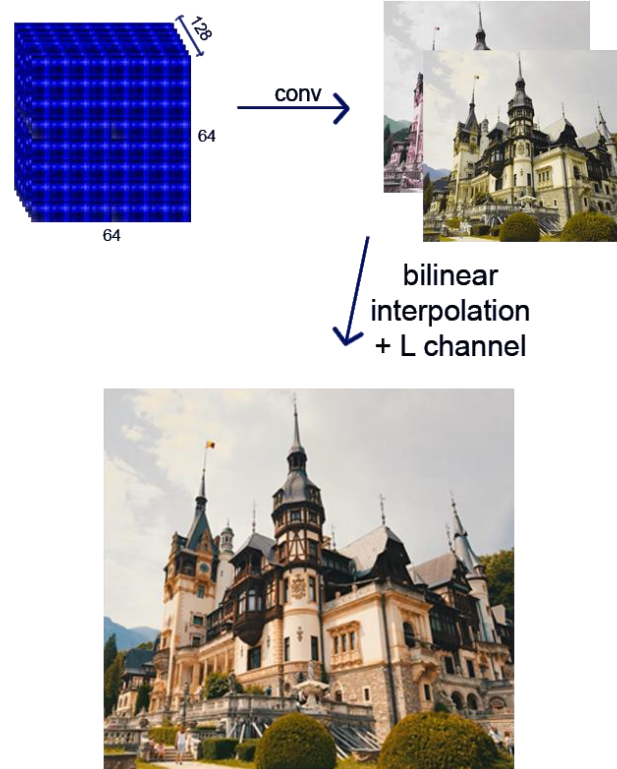
## Color Query: Extracting Color Queries and fusing with the main feature map



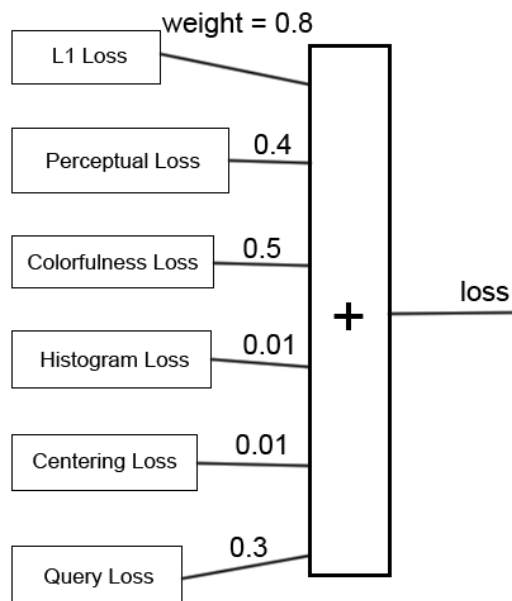


**Pixel Decoder:** Decodes the color channels from the main feature map





**Loss function:** Combines L1, Perceptual, Colorfulness, Histogram, Query and Centering loss



**Datasets used:** COCO & Places205

## Results:

